The OIL WEEKLY

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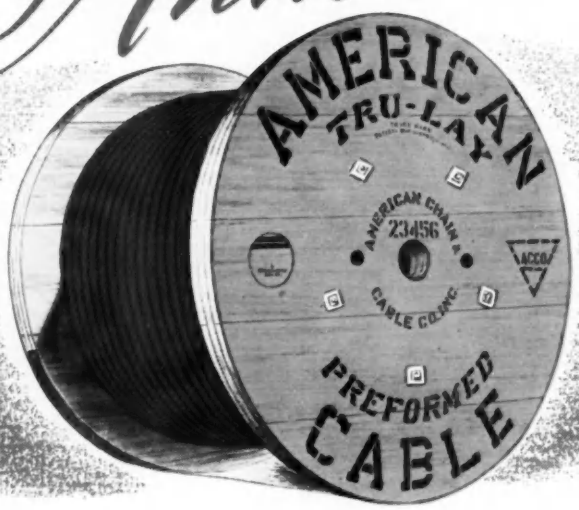

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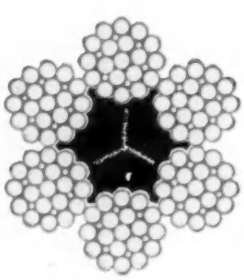

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• Years ago American Cable introduced preformed —the first basic improvement in wire rope in nearly a century. Since then, **TRU·LAY** Preformed has set the service pace for *all* wire ropes.

Now, **TRU·LAY** Preformed, of Improved Plow Steel,* is an even better rope because of a proven superior *GREEN* lubricant. This green lubricant is made to our specifications and has greater adherence —it protects the wires better—helps them to wear longer. This superior lubricant is literally *"stuffed"* into every strand so that every wire is covered and every void between wires is filled. **TRU·LAY's** Green Lubricant is your assurance that the best wire rope is now much better.

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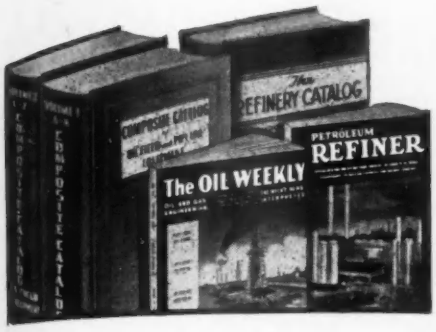

Specialized Oil Publications of
THE GULF PUBLISHING COMPANY

The OIL WEEKLY and The COMPOSITE CATALOG for the drilling-producing-pipeline industry

PETROLEUM REFINER and The REFINERY CATALOG for the refining-natural gasoline industry

THE OIL WEEKLY

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LOOKING AHEAD
... with the Editor

ANNUAL statements of representative oil companies for 1944 indicate a number of important trends in the industry. The number one, long-term problem of finding new oil supply sources is meeting with only fair success in its solution and is faced with the handicap of increasing costs. Operations for 1944 did result in more oil than was produced in 1943, but the cost per barrel to produce it also rose sharply. It is also forcefully noted that discoveries of new oil are running substantially less than they did during the previous decade.

To meet present demands, the industry is drawing on the backlog of reserves established and developed at low cost during the 1930's, and the oil produced is being replaced with new crude oil reserves discovered at much higher cost.

Current favorable earnings result, therefore, from the large volumes being produced and successful finding experience, not of the present, but of the 1930's instead.

The influence of high taxes on the trend of diminishing returns on investment is pointed out.

In an early issue, statements from a large number of representative companies will be reviewed and digested, by A. R. McTee, Staff Writer.

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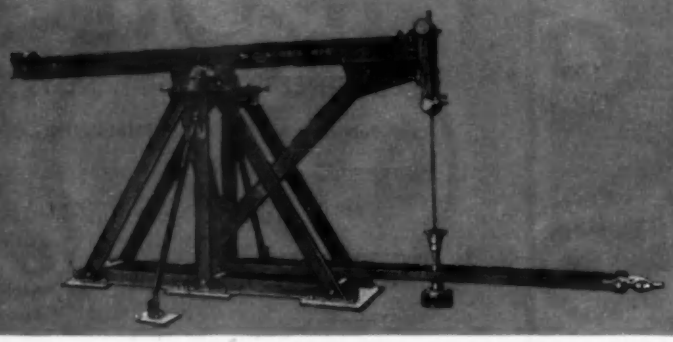
UNDER-PULL PUMPING JACKS

No. 405	Capacity	2,000 LBS.
No. 407	"	3,000 LBS.
No. 408	"	4,500 LBS.
No. 509	"	6,500 LBS.
No. 610 "UTILITY"	"	7,500 LBS.
No. 610	"	8,000 LBS.



No. 710	Capacity	10,000 LBS.
No. 812	"	12,000 LBS.
No. 915 (Illustrated)	"	16,000 LBS.

NORRIS
COUNTER-BALANCED JACKS

Send For BULLETIN No. 25

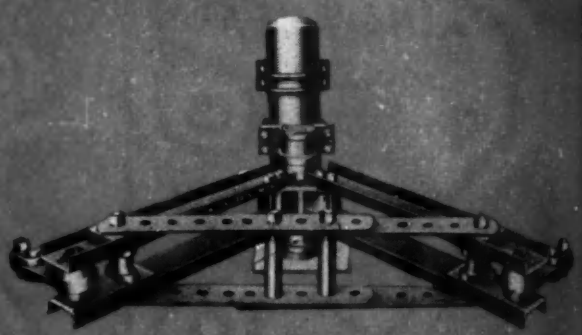
W.C. NORRIS
SURFACE EQUIPMENT

STROKE POSTS

	Rod Line Load Capacity
Type "L" Adjustable Stroke Post	8,000 LBS.
6" x 5' Universal Pendulum Stroke Post	10,000 LBS.
7" OD Multiplier or Stroke Post	10,000 LBS.
Clamp Type Pendulum Multiplier or S.P.	12,000 LBS.
No. 812 Counter-Balanced Stroke Post	14,000 LBS.
Type "M" Adjustable Stroke Post	14,000 LBS.
No. 915-W, 915-TOW and 920-TOW Counter Balanced Stroke Post (Illustrated)	26,000 LBS.

BELL CRANK used in specialized applications for pumping one or more wells off pumping unit or gear box.
Send For BULLETIN No. 26

SWINGS



		Rod Line Load Capacity
Type "L" Swings, regular and adjustable		8,000 LBS.
Type "RS-HS-EHS" Swings,	"RS"	6,000 LBS.
	"HS"	8,000 LBS.
	"EHS"	10,000 LBS.
Regular Link Type Swing		16,000 LBS.
Regular Adjustable Link Type Swing		16,000 LBS.
"TO" Link Type Swing		20,000 LBS.
180 Degree Trussed Swing	6 in.	8,000 LBS.
	8 in.	20,000 LBS.
180 Degree Swing with Center Reinforcing Plate	10 in.	10,000 LBS.
	12 in.	16,000 LBS.

Send For BULLETIN No. 27
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DISTRICT OFFICE:
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EXPORT OFFICE: New York City

BUY WAR BONDS FOR VICTORY

The Outlook

President Truman likely will favor postwar stockpiling of strategic war materials. He headed the Senate committee which suggested that lend-lease obligations be paid in oil and other raw materials, which the government would hold as emergency stockpiles.

* * * *

Production of natural gasoline and cycling plants in District 3 by end of 1945 will be at least 35,000 barrels per day greater than at present. Twenty-four plants or additions are under construction or authorized with several others contemplated. Sharpest increase in output should occur in June and July.

* * * *

In line with the current view that it's cheaper to buy production than drill for it, one deal, involving large reserves in a Lower Texas Coast field, likely will be negotiated soon.

* * * *

Synthetic rubber manufacturing has permitted use of a process of making carbon black five times more productive than the old, thus overruling low price gas as a prerequisite and greatly reducing the amount of gas needed for a commercial plant. It may become feasible to make carbon black nearer consuming centers, thereby giving sales value to byproducts. See page 50.

* * * *

About 50 percent of District 3 fields now on "restricted" development will be removed soon, eliminating necessity of getting approval to drill so long as PAO-11 rules are followed. All oil and gas fields and those distillate fields with recycling operations will be removed.

* * * *

FPC is expected to crack down on emergency projects which appears to be looking too much toward postwar expansion. United Gas Pipe Line Company's Carthage-Ouachita line may be the first "victim."

* * * *

Republicans, aided by Democrats from the South's industrial areas, may shorten the term of extension for the reciprocal trade agreements act, but will not succeed in an effort to prevent further cut in tariff rates.

* * * *

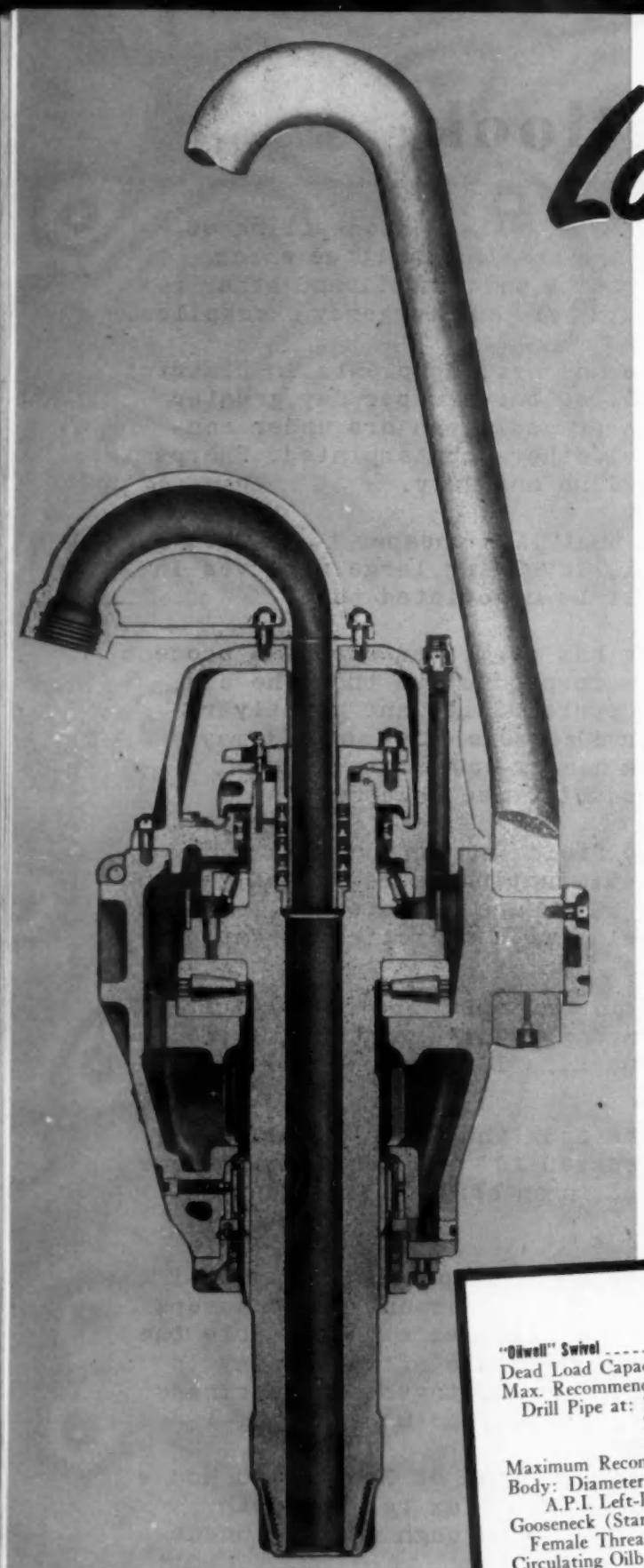
Such increased civilian production as is possible after V-E day, will go largely toward meeting needs of essential consumers ---railroads, public utilities and the like. More than double the amount of steel originally estimated available after V-E day is now expected theoretically, but manpower shortages and weariness of workers and machines will tend to curtail actual volume.

* * * *

Effort is being made by a joint committee of Senate and House members to agree in advance on a program of tax relief, both corporate and individual, that can be put through without undue loss of time after V-E day.

* * * *

The southeast corner of Arizona may attract oil exploration attention. Two seismograph parties are working there and leasing is underway.



Look inside!

...and see why "Oilwell" Swivels keep going

"OILWELL" Swivels are noted for their consistently outstanding service. They *keep going* under the most severe conditions. There's a reason for this. The entire line of swivels is designed to assure long life and trouble-free operation. Here are a few of the many desirable features of "Oilwell" Swivels:

1. Bearings and lubrication—Heavy-duty full-apex type main thrust roller bearing is specially designed for its application. A tapered-roller auxiliary bearing in the housing cap absorbs upward thrust and takes part of the radial load. A straight-roller radial bearing is located at the bottom of the housing. Wide spacing of the two bearings carrying the radial load assures maximum stability. All bearings are immersed in the circulating oilbath. Grease-lubricated oil seals prevent loss of lubricating oil. Two large weatherproof breathers contribute to cool operation.

2. Wash pipe and wash pipe packing—Abrasion-resisting lining of Di-Hard metal bonded to the inside protects the wash pipe from cutting action of the fluid. A ground-and-polished armor of Di-Hard bonded to the outside greatly extends the wear-life of both wash pipe and packing. Self-sealing wash-pipe packing requires no adjustment and is easily lubricated with waterproof grease through conveniently located fittings.

3. Long-radius heat-treated cast-steel gooseneck—Enlarged fluid passage at the bend decreases fluid velocity. This feature combined with long radius reduces flow-restriction and fluid-cutting.

4. Shock-absorbing and wear-preventing link-rest pads protect the swivel and the links from destructive hammering of metal against metal. Integral ears prevent the links from sliding off the pads.

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Branches Serving All Oil Fields

UNITED STATES STEEL

USS

SPECIFICATIONS

"Oilwell" Swivel		No. 60-C 100	No. 100-C 200	No. 150-C 300	No. 200-C 400
Dead Load Capacity	tons				
Max. Recommended Drilling Depths with 4½" Drill Pipe at: 100 r.p.m.	feet	5,700	8,500	12,500	17,000
200 r.p.m.	feet	4,700	7,000	10,000	14,000
400 r.p.m.	feet	3,800	5,600	8,500	11,000
Maximum Recommended Drilling Speed	r.p.m.	400	400	400	400
Body: Diameter of Fluid Passage	inches	2¼	2-13/16	3½	4
A.P.I. Left-Hand Regular Tool-Joint Pin	inches	4½	5-9/16	6⅝	7⅝
Gooseneck (Standard) with A.P.I. Line Pipe Female Threads, Size	inches	2½	3	4	4
Circulating Oilbath, Capacity	gallons	5	9	15	22
Length: Over-all	inches	67⅛	93⅜	103⅛	109¾
Width: Over-all	inches	26½	33½	41½	41½
Between Link Rest End Pads	inches	20½	26¾	34¼	34¼
Clearance Between Bail and Gooseneck	inches	14⅞	22	22	24⅝
Weight: Domestic	pounds	1,020	2,850	3,800	5,025
Export	pounds	1,220	3,300	4,530	6,025

"OILWELL"

The Changing Panorama

Industry to Expand, Increase Efficiency

WITHIN the next decade the oil industry of the United States will increase its gross investment from 21½ to 29 billion dollars, an expansion of 35 percent, or an average of 3½ percent annually, according to the recent forecast of John D. Gill, director, The Atlantic Refining Company, before the Bond Club of Philadelphia. Much of the new capital will be used in the industry's foreign developments, he predicted, and there will be emphasis on development of new ideas and increased efficiencies rather than mere duplication of existing facilities. Relatively large investment will be made in facilities for producing new products for new uses; substitute products will be developed to replace existing products at cheaper cost; and new processes will be inaugurated to provide customary products and services with less labor and therefore at less cost.

Of the 7½ billions of dollars of new capital to be invested by 1955, some will come, as heretofore, from earnings of the oil companies, but perhaps 4½ billions will be raised by long term borrowing, Gill predicted. He pointed out that for a long time there has been a steady decline in interest rates and that low rates should be expected to continue. "For as we progress by technological developments to higher standards of living, surpluses of income for capital use accumulate with increasing rapidity. The value of human effort increases in importance relative to the value of capital." And he added, "Earnings then follow interest rates downward as a matter of cause and effect," making it necessary for the business which borrows money at relatively low rates to be satisfied with more moderate rates of earnings on investment.

Banks, especially, are faring better than heretofore, Gill stated, and their higher earnings are the product of the highest volumes, the lowest interest rates, and the smallest operating margins in recent history, or perhaps in all history. In adjusting itself to the powerful economic forces that prevail, the oil industry may take its cue from the recent experience of the banks, he suggested, "and earn satisfactory total profits by large volumes of transactions even though operating margins and overall rates of return on total investments are reduced."

☆

The entire national magazine advertising appropriation of Tide Water Associated Oil Company last year was devoted to full pages depicting in color the part petroleum is playing in the war. We are in receipt of a brochure reproducing in color the striking scenes used in the campaign. The job was a good one and should help the public to get the idea that oil companies are something more than a source of taxes.

It is believed that a more equitable price is necessary to stimulate exploratory drilling particularly on the part of the small producer. The number and depth of these exploratory wells must, in our opinion, be increased far beyond that considered normal in the past.

—W. S. S. RODGERS, *Chairman,*
—HARRY T. KLEIN, *President,*
The Texas Company.

Third Quarter Drilling Program "Looking Up"

ANNOUNCEMENT by PAW (see page 25) that the industry's third quarter allotment of seamless and electric weld tubular goods will be the largest since Pearl Harbor means oil operators can discard their fears of insufficient supplies for drilling operations.

Contrary to recent pessimistic predictions, this announcement indicates the supply will be plentiful—sufficient not only to maintain present drilling rates but even to take care of an enlarged drilling campaign. Therefore, instead of cancelling some plans to drill as some have been doing recently, operators will be safe in going ahead with plans to expand drilling activities to levels in keeping with the program scheduled by PAW for the third quarter.

Facing Problem of "No Help" Help

WHILE it may be too early, in terms of economic pressure—hunger—on the returnees, to draw definite conclusions, it is beginning to appear as though the oil industry's reliance on shipyards' and munition plants' release of the former drillers, roughnecks and other field men who flocked to "patriotic" work early in the war is not going to alleviate the manpower shortage to the degree expected.

Reports from the field place a hiring value on one farm boy, untrained, at twice that of a former roughneck who has been inocculated with the virus which spreads through a man's system after months of killing time and trying to make an appearance of industry substitute for production output.

Drill pipe, while coming out of the hole, cannot be impressed by bustle, nor can a mud pump be self-overhauled while the crew smokes and boasts of days on end during which work done consisted chiefly in checking in and out and doging the occasional visits of the leaderman.

Perhaps, after a period for re-orientation, the former crewmen can get back to prewar efficiency and effectiveness, but in the meantime the well-intentioned and earnest men among the returnees must face, and live down, the stigma of the shipyard.

Minimizing the Questionnaire Load

PRACTICAL accomplishments in simplifying and reducing the number of government questionnaires are set forth in a report made by the Advisory Committee on Government Questionnaires to its sponsoring organizations.

The efforts of the committee, in cooperation with government agencies, the report points out, have yielded sweeping benefits, saving millions of man hours and vast sums on the part of business firms required to report. Harold D. Smith, director of the Bureau of the Budget, which agency passes on questionnaires, writes the committee that it has been extremely helpful, particularly in supplying information about methods of reporting facts from routine company records, thus obviating special setups.

Texas Shares Growth In Natural Gasoline

THE share of Texas in the growth of natural gasoline plants between 1940 and 1944 has steadily grown from 37 percent in 1940 to 46 percent in 1944.

Expansion of plants in the Gulf Coast district is largely responsible.

As shown by an information circular on natural gasoline plants in the United States as of January 1, 1944, published by the United States Bureau of Mines, Texas led in the increase in natural gasoline capacity. In the period the Panhandle capacity was little changed, but that of East Texas increased from 929 to 1289 thousand gallons daily. Capacity declined in the other leading states including California and Oklahoma. Important gains were recorded in Illinois, Louisiana, and Arkansas.

After a 10-year period of relative stability, it is noted, the productive capacity of the natural-gasoline industry was significantly enlarged during the period. The total gain, from 11,662 thousand gallons daily to 16,013 thousand, was at an average rate of 9.3 percent per year. Most of the net increase is attributable to large plants of the cycle type, built to process condensate reservoirs in Texas and Louisiana.

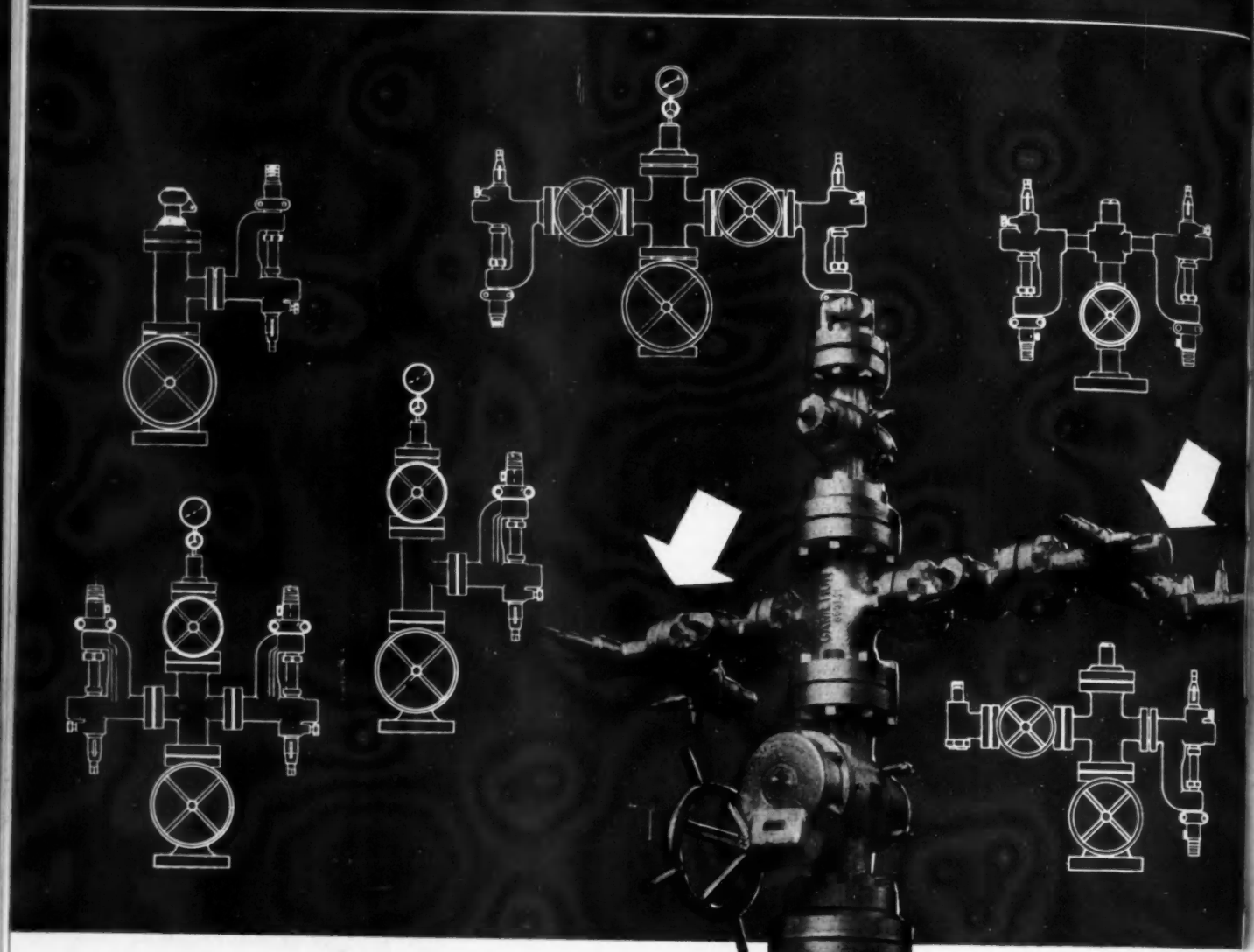
☆

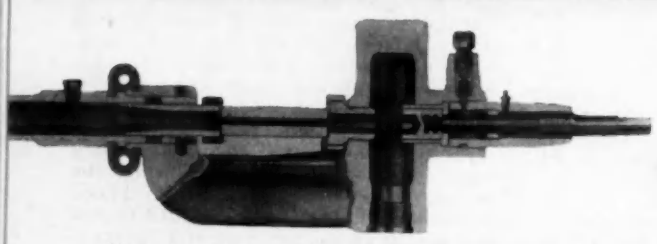
Oil products, in weight, make up 65 percent of all overseas military shipments. In bulk it approximates 16 times the food shipped. U. S. overseas forces require nearly twice as many tons of oil as of arms and armament, battle equipment, ammunition, food, and all other supplies. Yet, the military is receiving only a third of the products that results from the crude oil produced in the United States. The rest goes to meet essential civilian demands, including oil to power defense plants.

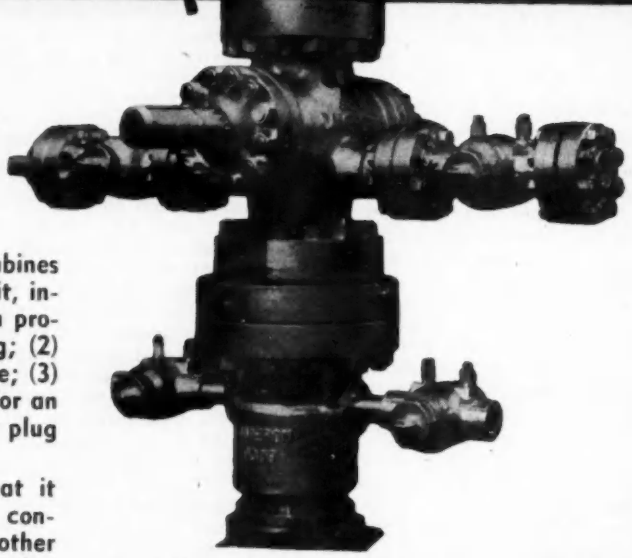
—RALPH K. DAVIES,
Deputy Petroleum Administrator.

BLUE PRINT FOR EFFICIENT TREE DESIGN . . .

Cameron Flow Wings







Here is a proven Xmas tree accessory which combines all necessary wing fittings in a single compact unit, including: (1) An easily operated valve section which provides a pressure-tight shut-off for choke changing; (2) A quick change choke, either positive or adjustable; (3) An efficient 2-bolt union which obviates the need for an additional union in the flowline; and (4) A bleeder plug to release pressure trapped in the flowline.

Choke changing is such a simple operation that it requires only a fraction of the time required by conventional chokes which employ cage nipples or other enclosures for the flow bean. Note in the cross-section view above that the choke section is out in the open where it can be easily and quickly replaced by simply making two turns on a clamp screw to release the flow bean, inserting a new bean and again tightening the clamp screw.

Cameron Flow Wings are offered in several screwed and flanged styles, ranging up to 10,000 lb. test. Like any standard fitting or valve, they may be incorporated in any manufacturer's Xmas tree.

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The Week's News

SUFFICIENT tubular goods and other equipment to carry out PAW's third quarter drilling program of 7200 wells is seen following WPB revisions, etc., outlined when Claude P. Parsons, director of materials, visited operators in Tulsa and Houston. Story below.

PAW Group and Foreign Oil Aid—Civilian oil problems in Europe and Africa will be given attention by PAW's Foreign Operations Committee, which at Deputy Administrator Davies' request, will act in an advisory capacity. V-E day will mean little if any improvement in the overall outlook for civilian oil supplies, gasoline excepted. Page 30.

Elk Hills Exploratory Work—Continuation of the present 65,000-barrel level of production in the Elk Hills Naval Reserve through 1946 is planned by the Navy, which also has programmed exploratory drilling to determine more definitely the potentialities of the reserve at a cost of $8,400,000, to be split by the Navy and Standard Oil Company of California. Page 28.

Patent Investigation Planned—Interested members of the industry now may obtain abstracts of enemy and enemy-occupied patents and patent applications seized by the Alien Property Custodian and available for use in this country. Meanwhile, President Truman has asked Commerce Secretary Wallace to determine whether any patents are being "misused" to support monopoly. Page 30.

Bureau of Mines Slashed—The House appropriations committee cut back appropriations for the Bureau of Mines, suggested it be required to revise its activities on the basis of a one-front war. One cut of $7 million for synthetic fuel development will be fought in the Senate. Page 27.

T-G-T Bonds Bought—Chase National Bank, New York, has bought the $44 million note made by Tennessee Gas and Transmission Company covering an RFC loan made last year to aid in its Texas-West Virginia pipe line. Chase paid a premium of $1,100,000.

Tire Quota Up—With increased supplies of carbon black, tire cord and other scarce materials expected, the Rubber Bureau last week raised its tire-production schedule for the current quarter to add approximately 690,000 tires to the 5,085,604 originally scheduled last month. Less carbon black is being used in each item than required for maximum efficiency, but no tire will be inferior to the extent that it will not give adequate service.

No Texas Gas Tax Raise—The Texas House of Representatives again has refused, 68 to 64, to increase the rate of tax on natural gas, and it appears unlikely that any increase will be voted this session.

OPA Blamed for Tax—Congressman Boren of Oklahoma blames OPA for an increase in the gasoline tax recently voted by the Oklahoma Legislature. Page 30.

Parsons, Trax Resigning—Claude P. Parsons, director of materials and David L. Trax, assistant director, are leaving their PAW posts soon. Page 26.

Mississippi Condensate Area Rules—Operators in Mississippi have agreed upon rules for gas-condensate areas which seem complete enough to be used as a precedent for statewide rules. Page 29.

"Tryout" Leases Suggested—Attorney General Biddle has formally suggested that surplus government plants be leased to potential buyers for such periods as may be necessary to determine their productive value, rather than immediate sale on the best offer. Page 26.

Plenty of Materials Seen to Meet PAW Third Quarter Drilling Program

Plenty of tubular goods and all other equipment will be available to carry out PAW's proposed drilling campaign for the third quarter, Claude P. Parsons, Director of Materials, PAW, told operators in meetings during the past week in Tulsa and Houston. Sufficient tubular goods, formerly a bottleneck, are now assured by a combination of allocation of such materials by WPB, and additional tonnage given up for that purpose by the armed forces and by reasonable withdrawals from inventories, he asserted.

"Several weeks ago it appeared that during the third quarter the industry would be 84,000 tons short of the tubular goods necessary to drill the 7200 wells desired during that period by PAW," he said at both meetings. (The 7200 wells had been calculated by PAW as necessary if the crude demands of the armed forces were met by domestic producers. Tubular goods in the above classification include tubing, casing and drill pipe but do not include line pipe.)

"Because the program of 7200 wells for the third quarter was recognized as vital, we have been doing everything possible to assure the total tonnage necessary to that program," he said.

WPB recognizes the practicability of a 90-day inventory of tubular goods in the oil industry so the first thing undertaken was a study of inventory, he explained. It was found that inventories were sufficient to allow a reduction of 50,000 tons. After many discussions the armed forces agreed that the need for oil was so vital that the armed forces would give up 30,000 tons of tubular goods capacity which they had planned to use in rockets, bombs, etc. Thus taking 50,000 tons out of the third quarter's inventory, plus the 30,000 additional tons made available by the action of the armed forces will give 80,000 tons. Use of lapweld tubular goods in Districts 1 and 2 where such use is customary, made 5000 tons available for the drilling program. Prior to the action of the armed forces in giving up 30,000 tons, the WPB allocation to the oil industry had been 248,000 tons. Now the total available will be 333,000 tons. Thirty-three thousand tons will be allocated for drilling abroad (except in Russia) and this 33,000 tons will be supplemented by withdrawal of 6000 tons from foreign inventory, giving all foreign operations (except Russia) a total of 39,000 tons. Russia's allocation of seamless tubular goods will come from additional capacity which may be allocated from the capacity of American pipe mills. Total such mill capacity is 300,000 tons per quarter.

All other materials are in good shape, Parsons said. In answer to questions he declared that the tool joint capacity has increased from 25,000 tool joints per quarter a year ago to 43,000 per quarter now and that it is expected that the peak on tool joint capacity will be reached in July when production should be at the rate of 45,000 tool joints per quarter. Russia's allocation of tool joints for the year has been set at 29,000, it was learned.

Plenty of Engines

The engine situation is greatly improved and engines should be available for all necessary use, Parsons said. In Tulsa Parsons asked the operators if there were any other bottlenecks, and none was mentioned in reply. In the Houston meeting, in answer to a similar question, one operator said that his company had experienced difficulty in getting plug valves. Parsons said that this matter would be attended to immediately and that he expected no difficulty in clearing it up promptly.

The situation abroad was touched on briefly, Parsons saying that "hangover" orders from last year had been cleared up with the exception of one now in process. For the past two months, he said, his office has been engaged in seeing that 1945 orders were on their proper place in the manufacturers'

schedules. This has about been cleared up. In answer to a question he indicated that operators abroad could expedite matters by sending in their purchase orders.

"As things now stand," he declared, "there should be no reduction in drilling programs during the third quarter because of shortage of oil country equipment."

Huge Gains in Steel Seen First Quarter After V-E

Hiland G. Batcheller, WPB chief of operations, estimated April 26 that in the first quarter after V-E day, military programs probably will take two to three million tons less of steel and at lease a half billion pounds less of copper than the current quarterly rate, and that cuts in most other metals will be proportionate.

With post-V-E day schedules still highly fluid, Batcheller said, no very exact quantitative estimates of the released capacity can be made, but in components and basic material in general the initial curtailment will be more than proportionate to the drop in munitions programs, because of inventory absorption.

A major question which will not be answered until V-E day arrives, he said, is that of manpower and what the situation will be in this respect depends on a number of factors—the extent to which women, older people and other workers withdraw from the labor market; the number of employes released by shipyards and other war industries who go into essential jobs, etc.

O. D. Donnell Honored

O. D. Donnell, president of The Ohio Oil Company, was honored with a doctor of engineering degree from The Case School of Applied Science, in exercises April 22 at Cleveland. The degree was conferred by Dr. William E. Wickenden, president of Case. Donnell received a bachelor of science degree from Case in 1906.

Parsons and Trax Soon To Leave PAW Posts

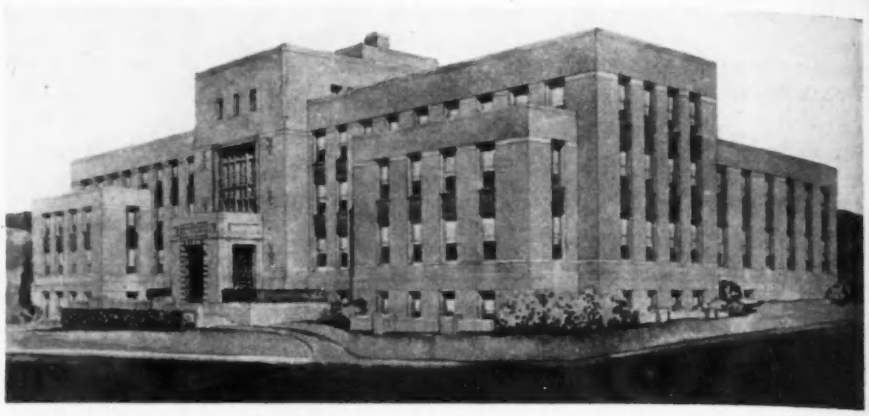
PAW is slated to lose two more of its top Washington men in the next few weeks.

David L. Trax, assistant director of the materials division, is expected to leave Washington May 15, to return to Gulf Oil Corporation, for which he was assistant general superintendent in charge of materials.

He will be followed about two weeks later by Claude P. Parsons, director of the division, who is on leave from his post as vice president of the Halliburton Oil Well Cementing Company.

Trax has been with PAW for 21 months and Parsons since January, 1945.

Bureau of Mines Oil Shale Laboratory



Architect's sketch of the $534,000 research and development laboratory to be erected on the campus of the University of Wyoming at Laramie as the newest unit in the Bureau of Mines' synthetic liquid fuels program. Construction will begin at once and it is expected to be finished by December 31, 1945. Here, scientists will develop methods for using the nation's vast reserves of oil shale which are estimated to contain 92 million barrels of oil. Contract for Laramie building has been awarded to E. C. Nickle of Arcadia, California. Facilities will be provided for laboratory and small pilot plant experimental studies on processes for refining shale oil, retort testing and development, and other research.

The laboratory will be operated in conjunction with the $1,500,000 demonstration plant to be established on the Naval oil shale reserves in Western Colorado, in the five-year program approved by Congress.

Lease of Government Plants for "Tryout" Period Formally Suggested

Leasing of surplus government war plants to potential buyers for such periods as may be necessary to determine their productive value, rather than their immediate sale on the best offer, was formally recommended April 24 to Congress by Attorney General Francis Biddle.

Biddle took the position that industry will be less reluctant to lease than to purchase where the future is uncertain and that the government itself may more readily ascertain the value of a property after its operation over a period of years.

Biddle proposed that leases contain options for sale at a price based on leasehold earnings or to be fixed by arbitration. Other provisions, he said, should require bidders to state in detail the proposed future use of plants and facilities, and prohibit the closing of plants to eliminate competition, requiring the lessee to maintain a stated number of employes during the term of the lease to prevent it from reverting to the government.

"Leasing of plants would not only give business and the government an opportunity to determine more realistically the ultimate sales price, but would encourage bidding by small business furnished with more limited capital resources than its larger competitors," Biddle declared.

"Leasing would tend to provide greater possibilities for the use of new processes and the production of products which have not been previously on the market. At the end of the leasing period sales can then be more easily consummated through the use of private capital."

Biddle reported that studies are now being made of the synthetic rubber and aviation gasoline plants which the government will have on its hands at the close of the war.

As fast as they are declared surplus, machine tools and production equipment will be made available to all types of industrial users through the medium of public sales, the RFC, a disposal agency designated by the Surplus Property Board, has announced. The Army and Navy have removed all restrictions upon the sale of surplus machine tools and production equipment.

Senate Oil Committee First Hearing May 17

Cartels will be the first subject to be taken up by the Senate Special Petroleum Resources Committee when it opens hearings May 17, Chairman Joseph C. O'Mahoney announced.

The committee will be joined by the Senate subcommittee which is considering O'Mahoney's bill for registration of corporation agreements in international trade and first witnesses will be Attorney General Biddle and Assistant Wendell Berge, chief of the antitrust division.

Further Fields Allowed Federal Price Subsidies

Nineteen pools in nine states have been brought into the subsidy plan, effective as from April 1, with price increases ranging from 2 to 35 cents a barrel, it was announced by OPA April 26. Fourteen of the pools were brought in under the stripper program and four under the high-cost plan, while one had its premium increased because investigation showed that the daily average well production was less than five barrels during the year preceding the date of application for an increase.

Covered by OPA's order were pools as follows:

Arkansas: McDonald, New (Ouachita County) 20 cents per barrel.

Illinois: New Haven (White) 20 cents; Patton, (Wabash) 35 cents.

Kansas: Ackerland, (Leavenworth) 35 cents; Ferguson, East, (Elk, west half) 35 cents; Hillsboro, (Marion) 2 cents.

Kentucky: Walthen, (Union) 20 cents.

Louisiana: Bayou Choctaw, (West Baton Rouge and Iberville) 26 cents.

Michigan: Bangor, (Van Buren) 20 cents.

Oklahoma: Burbank, (Kay and Osage) 25 cents; Hewitt, west old, (Carter) 25 cents; Homestake, (Seminole) 25 cents; Perryman, (Tulsa) 35 cents; Spring (sand), (Jefferson) 20 cents.

Texas: KMA, north-Strawn, (Wichita) 20 cents; Morita, (Howard) 35 cents; Oakville, (Live Oak) 18 cents; World, (Crockett) 15 cents.

Wyoming: Spindletop-Sundance, (Natrona) 25 cents.

Miller Succeeds Arnold At British-American Post

H. C. Arnold, vice president and general manager of British-American Oil Producing Company and Toronto Pipe Line Company has resigned effective May 1, and will be succeeded by C. D. Miller. Arnold has been elected vice president in charge of oil and gas exploration for Ashland Oil and Refining Company of Ashland, Kentucky, with headquarters in Tulsa.

H. A. Eklund, formerly head of British-American land department, becomes vice president and general manager of the California division; Robert E. Kepke, vice president and manager of Toronto Pipe Line, assumes the additional title of general manager and will also be a vice president of British-American Oil Producing Company. John E. Watson, formerly with Sinclair-Prairie Oil Company becomes manager of British-American land department with Thad C. Hoke, manager of the geological department: C. J. Kerwin becomes general production superintendent with J. J. Arps as assistant general superintendent and chief engineer. F. G. O'Brien was confirmed as treasurer of British-American and at the Los Angeles office Eklund announced appointment of O. I. Torkelsen as manager of exploitation and J. E. Matter, manager of exploration for the Pacific Coast area.

Answer to "Scare Talk" About Oil

Assailing "certain government officials, led by the ever-aggressive and power-hungry Secretary of the Interior," who, in 1933 and 1944, sought to impress upon the nation the possibility that we were running out of oil "to the end of the road of our expanding bureaucracy to Statism might be made less difficult," Senator E. H. Moore of Oklahoma declared April 24 that reserves at the end of last year were 20,453,231,000 barrels, or a 389,079,000-barrel increase over 1943.

These figures, Moore declared, constitute a full and complete answer to the "scare talk" that we are running out of oil, and the record was made, he pointed out, despite the peak production last year.

"I desire to call the attention of Congress again to the splendid and incomparable record of the petroleum industry for the year 1944," he said. "The petroleum industry was called upon to produce a greater quantity of oil in 1944 than ever before in its history. Total production during the last calendar year reached an all-time high of 1,677,421,000 barrels. This magnificent performance was accomplished under the severe handicaps of inadequate prices imposed by an arbitrary and dictatorial OPA and severe shortages of material, equipment and manpower.

"The record of the petroleum industry during the strain of the war years is an accomplishment in which every American can take pride."

Synthetic Liquids And Alaskan Funds Refused

Slashing $9,945,690 from its budget estimates and $3,563,230 from its current appropriation, the House Appropriations committee last week recommended that funds for operation of the Bureau of Mines during the coming fiscal year be limited to $15,881,860.

The committee report praised the war work the Bureau of Mines has been doing but thought it should begin to readjust itself for a one-front war, and postwar operations, and that several of its current activities "should ultimately be eliminated or drastically curtailed."

The committee cut $7,000,000 off the fund for synthetic liquid fuels investigations, for which the bureau asked $13,000,000, of which $9,700,000 was for construction of the hydrogenation and gas synthesis demonstration plants. The bureau had $5,000,000 for this project this year.

The committee also refused to permit the bureau to expand its oil and gas investigations, lopping $78,640 from the budget estimate to provide only $579,000, a decrease of $4000 from the current fund. The only other cut affecting oil operations was $1600 taken from an estimate of $80,000 for a new project in helium utilization and research.

The committee turned down $35,788 for new positions in the Petroleum Conservation Division, which was given $173,212, explaining that it had been proposed to re-establish positions formerly provided for under this appropriation but now being paid from PAW funds. Since PAW is to be continued during the coming fiscal year, the committee felt the re-establishment of these jobs on a permanent basis was not appropriate.

The committee again turned down the department's plea for money for development of Alaska, this time $1,072,600, declaring that the project, originally calling for $3,860,000, is of little practical value.

The Geological Survey was given $157,500 for investigation of mineral resources of Alaska, the same as this year but $19,500 under the budget estimate, and $475,400 for minerals on public lands and the naval petroleum reserves, also the same as this year but $81,500 less than requested.

Appraised of the action of the House committee in curtailing the fund for synthetic fuel research, Senator Joseph C. O'Mahoney, co-author of the legislation authorizing the project, declared he would fight to have the $7 million restored when the bill reached the Senate.

Record-Breaking Payment of Taxes Made in March

Dammed-up lubricating oil tax payments brought collections from that item in March to a record breaking $9,901,856, more than double the $4,861,923 received in the same month last year, the Internal Revenue Bureau reported.

Gasoline-tax collections for the month totaled $34,898,193 against $25,643,262 last year, and receipts from pipe line transportation were $1,444,661 against $1,483,119.

The March collections brought the Treasury's revenue from gasoline for the first quarter to $95,257,763, compared with $61,823,186 last year; while lubricating oil returned $22,567,978 against $14,351,268, and pipe line transportation $4,052,255 against $3,900,984.

A better picture of the tax potentialities of the three items, however, is given by the bureau's report of receipts for the first nine months of the fiscal year when gasoline returned $298,430,202 against $207,446,828 a year ago, an increase of $90,983,374; lubricating oil, $61,935,406 against $39,909,236, an increase of $22,026,170, and pipe lines, $12,358,578 against $11,709,947, an increase of $648,631.

Exploration of Elk Hills Shallow Zone Is Held Up by Budget Bureau

A Navy Department program to determine the extent of the Elk Hills oil reserves, given approval of the Joint Army-Navy Petroleum Board, congressional committees and PAW, was disclosed last week to be stalled in the Budget Bureau.

Although the House and Senate Naval Affairs Committee believe that existing legislation covers the project and agree with the Navy that it could be carried out with funds already available, Budget Bureau officials contend that the present law is not adequate.

Before the House Naval Affairs Committee April 25, Captain William G. Greenman, director of naval petroleum reserves, said the $8,400,000 program would show how much oil exists in the shallow and Stevens zones west of the restricted area to which present production is limited.

Need for these data lies both in the necessity for continuing its present level of production through 1946 and in the desirability for ascertaining just what oil and Navy has for future emergencies.

Will Split Cost

Cost of the exploration will be split by the Navy and Standard Oil Company of California on the basis of each's participation in the reserve—$7,515,000 by the Navy and $884,280 by the company after giving it credit for prior expenditures of $1,607,140 in the Stevens zone.

Greenman said it is planned to drill 23 locations, 18 in the shallow zone and the rest in the Stevens zone, with a maximum of 40 wells in the former and 24 in the latter, the shallow wells to average $60,000 and the deeper holes $250,000.

Information about the productive area of the shallow zone is limited to the eastern part of the field, he explained. That area, now is nearly fully developed but a few desirable well locations must be drilled if output continues at the 65,000-barrel level. Therefore, he pointed out, it is necessary to drill the western part of the reserve and, to some extent, along the southern edge.

Greenman said the Navy does not know now whether present production will seriously impair the total reserves of the field.

California Oil Future

The Navy is interested in the outlook for California. Production is not sufficient to keep the state's refineries operating at the rate required for war needs, and the production rate is expected to start downward this year, Greenman said. Lieutenant J. R. Bradley, economist in Greenman's office, said that by 1955, California production will be down to 400,000 barrels a day while peacetime demand then will be for 800,000 barrels, necessitating imports. Bradley estimated that California's present reserves of 3,500,000,000 will be implemented by 2,500,000,000 barrels through new discoveries and additions to reserves.

"In the event of another war in the Pacific," Greenman said, "California will again be called upon to operate its refineries at maximum capacity, currently some 900,000 barrels per day. In such an emergency, say in 15 years, with California production reduced to an estimated 300,000 barrels daily, all available sources would have to be called upon to supply the refineries. In such an event the extent of oil available to the Navy and the national security from Elk Hills would be of paramount importance."

The Stevens zone, he said, "is regarded by many to be the largest unexplored potential oil zone remaining to be proven in California."

J. R. McWilliams, PAW director of production, also testified, explaining that the oil agency approved the Navy's program because "if we are holding the naval reserve for an emergency we should know what is in it."

McWilliams said production in May will be about 200,000 barrels more than it should be under proper conservation practice but about the same amount under requirements, necessitating imports or withdrawals from stocks. The United States, he said, with about 40 percent of the world's oil reserves is supplying 65 percent of the Allied war needs.

"Over the Crest"

"PAW feels that production needs can be met, but we probably have gone over the crest in production," he stated.

He said that if drilling had stopped when we entered the war we would be producing a million barrels daily less than we are, explaining that about 400,000 barrels is coming from fields discovered since 1941. He declared that industry has undertaken as much wildcatting as it could, but admitted that it had been handicapped by lack of labor and materials and by the failure to get a 35-cent increase in crude prices.

Committee Chairman Vinson promised to send a letter to the Budget Bureau, outlining the committee's views of the adequacy of present legislation, but urged that should negotiations fail to move the Budget Bureau, the department should rush necessary legislation to the Capitol. He also urged the Navy to seek extension of the term in which Elk Hills production can be continued at 65,000 barrels daily.

Elk Hills Production Up To Programmed Rate

Production at the Elk Hills Naval Reserve now is virtually at the maximum authorized by Congress. H. D. Collier, president of Standard Oil Company (California), said development is well ahead of schedule, and the maximum allowable of 65,000 barrels a day has been reached for short periods, but is back to approximately 63,000 barrels because of repressuring work, etc. Drilling will continue in order to insure an even flow of crude without forcing wells beyond their MER, Collier said. In the past ten months 236 wells have been completed, with the use of 19 drilling strings.

Government's Elk Hills Oil Sale Set for May 8

Bids for the purchase of the government's share of the crude oil produced from the shallow zone of the Elk Hills naval reserve during the period from July 1 to November 30, next, will be received by the Navy at a public sale in Los Angeles, May 8.

The Navy estimates that its share of the production during the five-month period will amount to 7,191,000 barrels, but the quantities subject from time to time will be subject to (a) a maximum authorized daily rate of production available to the Navy of 50,000 barrels, (b) field conditions and (c) causes beyond the control of the Navy. Principal place of delivery will be at the United States Naval Fuel Annex, Elk Hills.

Any contract will reserve to the Navy the right to reduce or stop production at any time when it is no longer required for the national defense.

Specifications and full information may be had from the director, Naval Petroleum and Oil Shale Reserves, Navy Department, Washington; or the inspector, Naval Petroleum Reserves in California, Los Angeles, or the Supply Officer in Command, Naval Supply Depot, San Pedro, California.

East Coast Gasoline Now Approaching Highest Mark

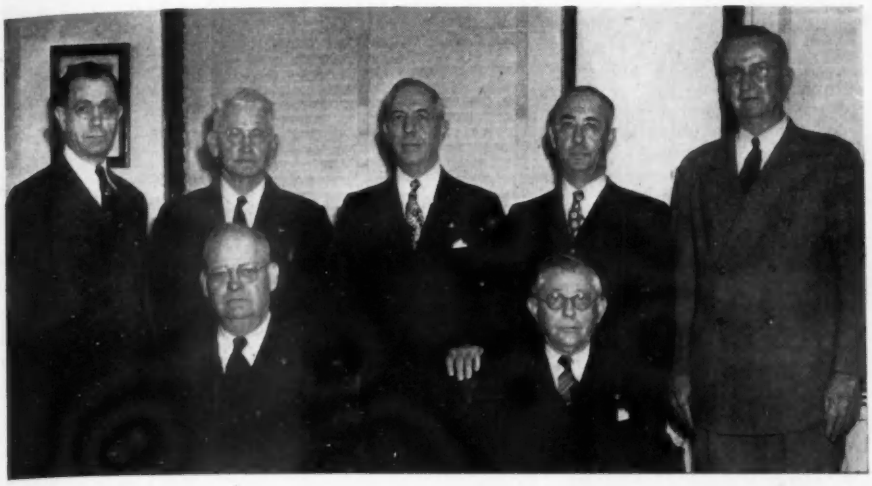
Despite transportation difficulties created by floods, loss of tankers and diversion of tank cars, PAW has succeeded in building gasoline stocks on the East Coast to a point some 680,000 barrels higher than a year ago, in anticipation of increased seasonal demand. Inventories of civilian gasoline on April 21 totaled 8,677,000 barrels in District 1, the highest total recorded in more than two years with the exception of the single week ended March 17 last when they were 2000 barrels higher.

For a time it is expected gasoline shipments will have to be reduced to release facilities for building up heating oil and other stocks.

Bureau Forecast for May Less Than PAW Figures

The monthly forecast of the Bureau of Mines placed the need for domestic crude in May at 4,812,900 barrels daily or 53,600 barrels less than PAW certifications. This would be within 10,000 barrels of the record high of 4,822,000 barrels daily in February.

Gulf Oil Veterans Receive Awards



A total of 220 years of continuous service with the Gulf Oil Corporation is represented in this Tulsa division group of Gulf Oil Corporation employes. Shown left to right, seated: D. M. Goodrich and D. B. Catterlin, with 35 years of service each, and standing, James S. Reichard, Thomas P. Lucas, Rush Greenslade, Orlando C. Gatrell and Hardin G. Bard, each of whom have been with the Gulf organization for 30 years.

A total of 226 Gulf employes in the Tulsa division recently were awarded pins for service with the company ranging from 10 to 35 years. Rush Greenslade, vice president, himself the recipient of a 30-year pin, made the awards in the Tulsa offices.

Nearly 3500 employes of the Gulf and subsidiaries who completed 10 to 40 years of service during 1944 are currently being awarded jeweled emblems and certificates in recognition of their records, by J. Frank Drake, president, has announced. Of the 3420 employes being honored, 7 have 40 years of service, 40 have 35 years, 105 have 30 years, 499 have 25 years, 822 have 20 years, 889 have 15 years, and 1058 have 10 years. To date 15,888 employes have been honored during the six years of the Gulf service award plan.

Mississippi Condensate Area Rules Recommended

Twenty-eight rules have been tentatively laid down by operators for regulating gas-condensate areas in Mississippi, and will be presented to the State Oil and Gas Board at a public hearing at the Capitol, in Jackson, Tuesday, May 1.

Baxterville field in Marion and Lamar counties was chosen as a model to be used in drawing up spacing regulations and as a basis for regulating all new fields. Spacing regulations applied to the Baxterville area state that "The Baxterville field, for the purpose of oil development shall be divided into spacing units of approximately 40 acres each, conforming as closely as possible to boundaries of the sectionalized subdivisions of the area. For the purpose of gas development, the Baxterville field shall be divided into spacing units of approximately 320 acres each, conforming to the boundaries of the sectionalized sub-divisions of the area. Only one well may be drilled on each spacing unit to each producing zone."

A rule requiring integration of interests on drilling units, matching that of PAW, also will be submitted.

Operators meeting in Jackson, April 24, agreed that the rules proposed for Baxterville seemed complete enough to be used as a precedent for later statewide rules.

The most pronounced differences of opinion were regarding allocation method and forced utilization. Operators are unwilling to depend on straight acreage, but instead want a formula which includes consideration of acreage plus bottom hole pressure. A minority favored some use of effective sand thickness in the formula.

Probable opposition to forced pooling at the May 1 hearing is forecast, although the independents and most major companies feel that the pooling requirements will be retained.

The Governor and other board members are proceeding cautiously and appear to be open minded with their main interest centered in sound conservation for Mississippi.

Texas Group To Discuss FPC Gas Probe May 1

A meeting of the Governor's Committee to make recommendations concerning a gas policy for Texas has been scheduled for May 1, at Austin, Olin Culberson, chairman, has announced. It is expected that this session will discuss a definite program for Texas in opposition to the Federal Power Commission investigation, the purpose of which, most Texans believe, is to control the production and distribution of gas throughout the United States.

The first meeting was recessed to enable Culberson and others to determine the attitude of other gas-producing states toward the investigation. Committee members feared that, without consultation, views of the several states might conflict. A united front would be presented at the investigation, if possible.

Exceptions to FPC'c proposed investigation into the natural gas industry have been taken by New York, Montana and Arkansas. Federal invasion of purely State matters is charged by the states taking issue.

Hannum Is Foreign Aide

Appointment of Erwin C. Hannum, formerly an administrative analyst in the bureau of the budget, as executive assistant to the chairman of the Foreign Operating Committee of PAW was announced last week by Deputy Administrator Davies.

Hannum will fill a new office in which he will work on problems that affect all three PAW foreign divisions and assist in coordinating their activities with other PAW operations and with the work of other government agencies interested in foreign oil matters. In addition he will take over the duties of executive secretary to the committee formrly handled by Howard L. Freeman who has resigned to join Oil Well Supply Company, New York, after serving with PAW since December, 1942.

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED April 28	April 21
Alabama	300	300
Arkansas	79,900	80,550
California	916,050	912,450
Colorado	9,050	9,550
Florida	15	15
Illinois	200,300	205,600
Indiana	11,400	11,700
Kansas	264,600	273,150
Kentucky	25,750	22,950
Louisiana	366,050	366,050
North Louisiana	71,050	71,050
South Louisiana	295,000	295,000
Michigan	43,300	53,400
Mississippi	52,400	52,400
Missouri	100	100
Montana	22,540	22,300
Nebraska	900	900
New Mexico	105,650	105,650
New York	13,300	13,200
Ohio	6,450	6,550
Oklahoma	363,550	347,350
Pennsylvania	36,250	37,200
Tennessee	35	35
Texas	2,170,500	2,170,500
Upper Gulf Coast	565,200	565,200
East Texas Field	378,100	378,100
Rest of Eastern Texas	145,500	145,500
Lower Gulf Coast	249,750	249,750
Southwest Texas	81,400	81,400
South Central Texas	21,000	21,000
West Texas	489,550	489,550
North Texas	150,050	150,050
Panhandle	89,950	89,950
West Virginia	8,150	8,700
Wyoming	106,050	106,350
Total United States	4,802,590	4,806,950

BUREAU OF MINES REPORT

Total stocks, foreign and domestic, April 21, as reported by the Bureau of Mines were: 222,920,000 barrels with a daily average production of 4,798,000; and runs to stills 4,676,000.

PAW Group to Aid Europe In Handling Civilian Oil

Preliminary steps for handling oil supplies to civilian Europe after United Nations military forces relinquish their responsibilities were taken by PAW last week when Deuty Administrator Davies called upon the Foreign Operations Committee to reorganize its European Petroleum Committee for active participation in an advisory capacity

Davies asked Orville Harden, chairman of the Foreign Operations Committee, to expand the membership of the subcommittee, change its title to European Petroleum Supply Committee, and make any necessary modifications of its responsibility. It was proposed that the committee operate with respect to such European areas as are indicated by PAW from time to time, dealing with crude and products of all kinds, except as otherwise provided by the PAW foreign supply and distribution division.

The major task of the expanded subcommittee, Davies, explained, will be to compile data on authorized supply programs and help arrange for the transportation of products in accordance with such programs.

Present membership of the European Committee includes J. P. Berkin, M. J. A. Bertin, L. K. Blood, H. T. Dodge, H. G. Denham, H. A. Hassan and A. M. Wylie, all of New York; H. I. Casteel and B. P. Newton, Pittsburgh, and W. R. Marshall, Philadelphia.

Davies also took steps to relieve the military forces of responsibility for supplying civilian petroleum needs in North Africa through the same medium, the Foreign Operations Committee.

He asked Harden to appoint additional members to the North Africa Supply and Distribution Committee and assign to it the same responsibilities as wil be imposed upon the European group.

Blood and Newton are also members of the North Africa committee, which also included N. Goddard, J. Parkinson, W. H. Dunning, and H. A. Thomas, all of New York, and J. F. Wooler of Philadelphia.

European Demand Still to Govern Civilian Gasoline

The most that can be expected after V-E day in the way of relaxation of restrictions is a slightly higher gasoline ration for civilian motorists, the extent of which will depend, to large extent, upon how much fuel will be required by our armies in Europe, the military government and the occupied areas.

OPA already has announced that heating oil rationing will continue next year on the levels of the past winter, with the warning that the supply of oil will not be more and may be slightly less than this season. The rationing already has been tightened up, coupons currently valid not being good after next August 31. This winter, coupons of the previous season remained good.

No increase in the supply of liquefied petroleum gases for civilian consumption will result from victory over Germany, and all present limitations will be continued.

The prohibition against new installations for the use of these gases, Deputy Administrator Davies explained, will have to be continued because butane and propane are widely used industrially, butane for high-octane aviation gasoline and synthetic rubber and propane for chemicals and for heat treatment of metals. It will not be possible next winter to give the relief to householders which was accorded this season when approximately 2000 barrels a day of butane was diverted from the 100-octane gasoline program for home heating.

Truman Suggests Patent Study

Groundwork for possible patent legislation was seen in a letter from President Truman April 26, directing Secretary of Commerce Wallace to make an investigation to determine if patents are being "misused to support unlawful monopolies" in violation of the antitrust laws.

Wallace immediately appointed a committee to make the study. To serve, as suggested by the President, he invited Stabilization Director William H. Davies, Attorney General Francis Biddle, Chairman Charles F. Kettering of the National Patent Planning Commission and Director Vannever Bush of the Office of Scientific Research and Development.

In his letter to the secretary, Truman suggested that Congress might be glad to have the results "of a full and objective study of the operation and effectiveness of the patent laws and their relation to the purposes of the antitrust laws and to the postwar economy, together with specific proposals for such legislation as may seem to be appropriate."

Thus far, the President commented, the several departments have made no concerted effort to formulate a policy upon this subject.

Descriptions of Patents Available By Industries

Brief descriptions of approximately 45,000 United States patents and patent applications, seized from enemy aliens and nationals of occupied countries and available for license to American citizens, may now be had in printed form, arranged by industries.

Prepared by the Alien Property Custodian, the abstracts include 33 sections in the chemical industries, and cover more than 800 methods of cracking and refining of petroleum products; manufacture of synthetic fuels from mineral and shale oils; the Fisher-Tropsche synthesis; gasoline octane number improvement; anti-knock agents; gum removal; gum inhibitors; viscosity modifiers; pour point depressants; hydrogenation of gasoline; preparation of gases, etc.

The 33 sections complete are available at $25, and individual sections, each covering an allied group of patents, at $1 each.

Mechanical-electrical abstracts, also available at $25 for the whole and at prices varying with the number of patents for the individual sections, cover about 37,000 patents and applications, dealing with mineral oils; earth boring and drilling; gas-oil separation; pipe joints and couplings, etc.

Most of the patents covered in the abstracts are available for licensing to American citizens for an administrative fee of $15 per patent, on a non-exclusive basis for the remaining life of the patent. The enemy patents are royalty free, but those of enemy-occupied origin are subject to reasonable commercial royalties. Any improvements on these patents will become the exclusive property of the licensee.

Copies of the abstracts, or further information, may be had from the Office of Alien Property Custodian, 135 South LaSalle Street, Chicago.

Blames OPA For Increase In Oklahoma Gasoline Tax

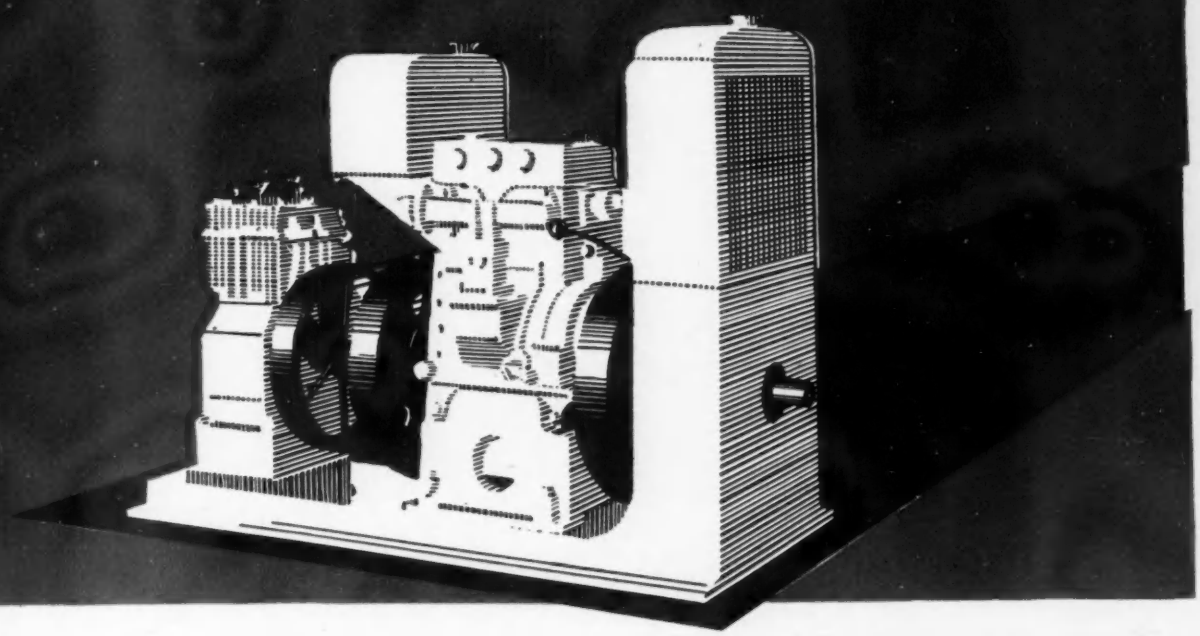
Failure of OPA to provide an adequate price for crude oil was responsible for the action of the Oklahoma Legislature in increasing the gasoline tax, it was charged in the House of Representatives April 26 by Congressman Lyle H. Boren.

Boren contended that under a "decent price" for crude, this action would probably not have been necessary and the needed funds could have been obtained from the 5 percent tax on the gross value of crude oil. The price of oil now is little more than in 1941 and the state's production last year was about 30,000,000 barrels under 1941, he said.

Urging prompt action on his bill to provide a parity price for oil, Boren criticized OPA, which he said, "has not been guided by the intent of Congress, but has substituted for that intent a philosophy of its own whose origin I cannot attempt to explain except to say that it grew in part out of the incompetency of the men who were given authority over the matter of oil prices.

"They have never gone much further than to look at the earnings statements of the largest oil companies and conclude that all oil companies are doing very well and that the thousands who produce crude oil exclusively are to be judged by the same standards as those who make profits from the operation of pipe lines, refineries and marketing facilities," he said.

Chrome-lined Donkey-engine



The donkey-engine, though small, is a "man of all work" . . . on shipboard, in mines, in oil fields, on construction jobs. Wherever there are tough jobs to do, we find the donkey-engine doing them.

Plain in appearance and with no fancy trim, these sturdy little work engines are nevertheless becoming large users of chromium, the decorative metal. But donkey-engines don't use chromium for decoration, unless it is a "decoration for merit" for greater reliability and lower maintenance cost. For the chromium they use is inside the cylinder . . . a chrome lining . . . PORUS-KROME.

PORUS-KROME is hard, pure chromium which is applied to cylinder bores by the Van der Horst process. It has tiny pores and channels in its surface which serve as reservoirs for lubricating oil, feeding it back as needed. It reduces corrosion and wear, and multiplies cylinder life 4 to 20 times . . . ring life 3 to 4 times.

Every type of heavy-duty engine needs and uses PORUS-KROME . . . bus, truck, tractor, locomotive, marine, stationary power plants . . . large and small . . . even donkey-engines.

You would expect that anything as good as PORUS-KROME would be used by the Army and Navy. It is . . . in engines for submarines, destroyer escorts, mine sweepers, landing craft, tanks and airplanes. Right now, they take the entire production of the three Van der Horst plants.

But someday soon you, too, can have PORUS-KROME. In the meantime, why not investigate the advantages PORUS-KROME will give your engines?

PORUS - KROME

Good for the Life of your Engines

VAN DER HORST

U. S. PATENTS 2,048,578 AND 2,214,604

VAN DER HORST CORPORATION OF AMERICA

AN AFFILIATE OF DRESSER INDUSTRIES

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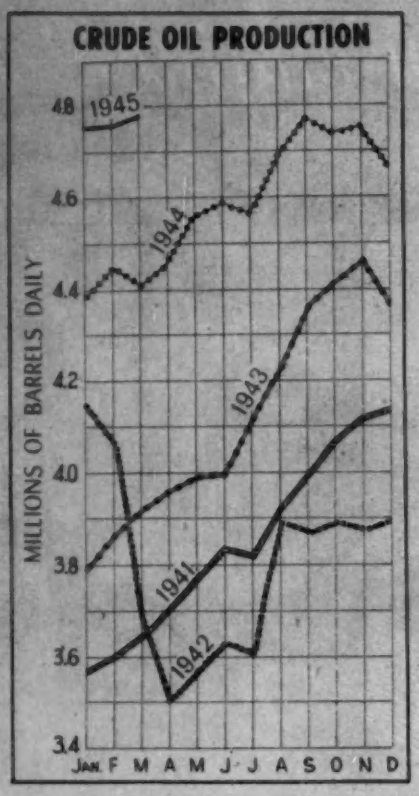
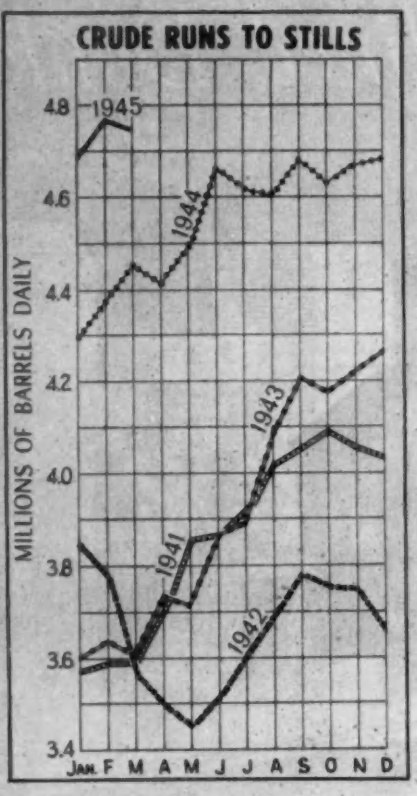
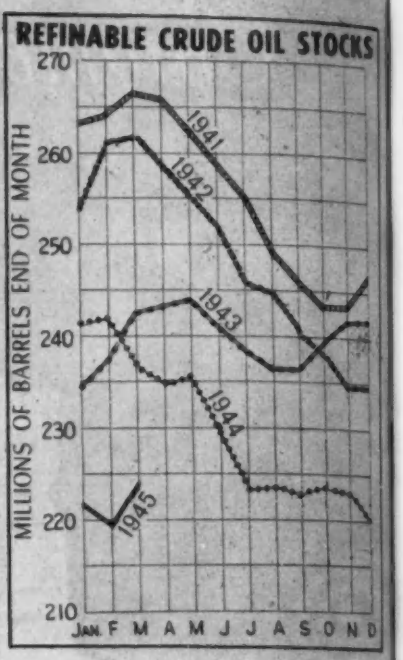
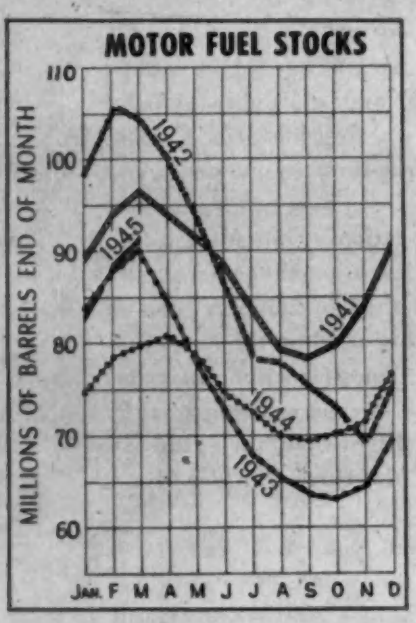
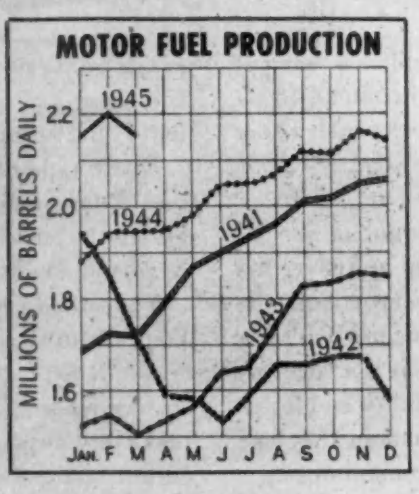
Monthly Activity Trends

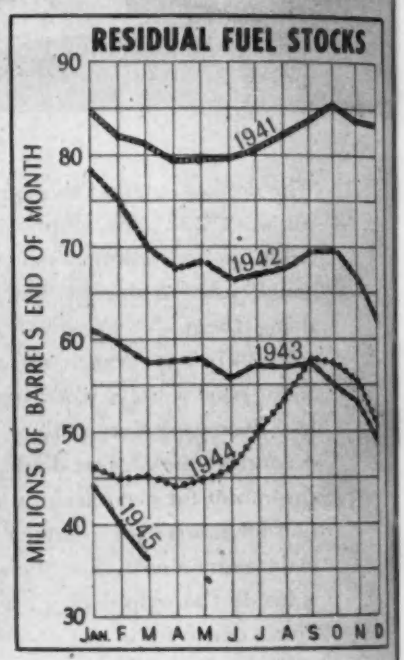


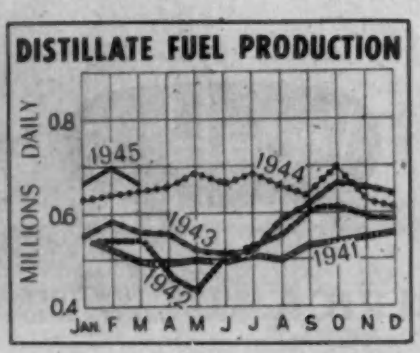


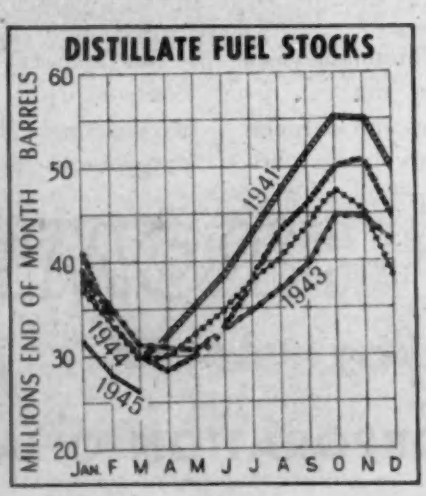


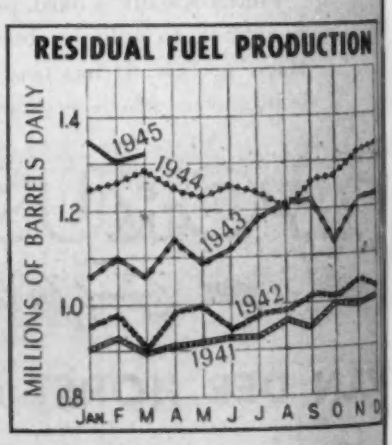












Industry Showing Strain of Heavy Wartime Burden

Demand runs one third higher than before war, requiring similar increases in crude production and refinery runs. Stocks are cut to minimum levels, and large production eats into crude reserves.

By L. J. LOGAN
Associate Editor

CLOSELY interwoven with the nation's vigorous miltary operations and war production, the use of petroleum has expanded ceaselessly until it is far greater than before the war, and even at this advanced stage of the fighting there has not yet occurred any leveling out of demand. Instead, each month has called for more petroleum than the month before, and a further increase in requirements is foreseen for May, the fifth month of this year.

This continued increase of petroleum demand through a large part of the first half of the year, coupled with some hints as to what to expect after V-E Day, makes it appear fairly certain that 1945 is due to be another record-breaking year in use of oils, in spite of any curtailments that may occur temporarily after Germany's defeat. The principal decline to be expected after V-E Day is in military need for gasoline, but that is to be offset by some liberalizing of gasoline rations to U. S. civilians.

To Use More Oils

Fuel oils will be needed in undiminished volume for intensifying the war against Japan, because of increased operations by sea, and civilians have been warned to expect no loosening up of supplies for their use. This general outlook for coming months, together with the almost half-year of unprecedented petroleum demand already assured, points to substantially greater consumption of oils in 1945 than the record-breaking use of 1944.

The industry has succeeded in keeping abreast of this ever-increasing demand for its products in spite of endless handicaps, which have included shortages and special burdens in many categories. However, it has been necessary to resort to many special and extraordinary measures and to make the most of all existing advantages in order to meet the heavy needs for oils, and from numerous viewpoints the industry now shows the strain of the heavier and heavier burden imposed by the war.

More and more states and districts have reached and gone beyond the limits of efficient crude producing ability, the more recent having included all districts of Texas and adjacent states, while the latest certifications will also put California in the over-producing class. The excessive drawing on fields and wells has been necessary because drilling and exploration have not been possible upon a scale in line with the sharply increased demand for petroleum.

To supplement current production, there has been an extraordinary using up of crude in storage, and crude stocks diminished in March, 1945, to a

U. S. Crude Oil Production, By States and Districts, March and First 3 Months, 1941, 1944, 1945

From U. S. Bureau of Mines, except 1945, estimated from A.P.I. weekly reports.
THOUSANDS OF BARRELS

State or District	MONTH TOTAL MARCH				DAILY AVERAGE IN			TOTAL FIRST 3 MONTHS			
	1941	1944	1945	% Diff. '44-'45	1941	1944	1945	1941	1944	1945	% Diff. '44-'45
Alabama			8				.3			24	
Arkansas	2,191	2,490	2,499	+ .4	70.7	80.3	80.6	6,299	7,247	7,313	+ .9
California	18,903	25,667	28,128	+ 9.5	609.8	828.0	907.4	54,941	74,740	80,934	+ 8.3
San Joaquin Val.	7,586	12,013	14,020	+16.7	244.7	387.5	452.3	21,979	35,028	40,247	+14.9
Coastal District	2,558	3,928	4,589	+14.4	82.5	126.7	148.0	7,503	11,320	13,105	+15.8
L. A. Basin	8,759	9,726	9,519	— 2.1	282.6	313.8	307.1	25,459	28,392	27,582	— 2.8
Colorado	125	225	309	+37.7	4.0	7.3	10.0	355	651	876	+37.3
Florida		1				.0			5	3	—40.0
Illinois	10,267	6,704	5,962	—11.1	331.2	216.3	192.3	29,415	19,878	17,928	— 9.8
Indiana	642	450	339	—24.7	20.7	14.5	10.9	1,841	1,289	1,092	—15.3
Kansas	6,258	8,497	8,252	— 2.9	201.9	274.1	266.2	17,968	24,811	23,705	— 4.5
Kentucky	414	720	599	—16.8	13.4	23.2	19.3	1,225	2,078	2,390	+15.0
Louisiana	9,418	10,951	11,342	+ 3.6	303.8	353.2	365.9	26,687	31,938	32,568	+ 2.0
North La.	2,096	2,055	2,179	+ 6.0	67.6	66.3	70.3	6,116	6,071	6,242	+ 2.8
South La.	7,322	8,896	9,163	+ 3.0	236.2	286.9	295.6	20,571	25,867	26,326	+ 1.8
Michigan	1,189	1,597	1,502	— 5.9	38.4	51.5	48.4	3,510	4,794	4,277	—10.8
Mississippi	570	1,267	1,605	+26.7	18.4	40.9	51.8	1,724	3,878	4,529	+16.8
Missouri	4	3			.1	.1		11	9		
Montana	598	741	635	—14.3	19.3	23.9	20.5	1,756	2,185	1,819	—16.7
Nebraska	113	39	29	—25.6	3.6	1.3	.9	337	102	86	—15.7
New Mexico	3,268	3,557	3,220	— 9.5	105.4	114.7	103.9	9,272	10,357	9,322	—10.0
New York	410	399	378	— 5.3	13.2	12.9	12.2	1,206	1,167	1,069	— 8.4
Ohio	273	263	195	—25.9	8.8	8.5	6.3	806	748	566	—24.3
Oklahoma	13,005	10,333	11,459	+11.0	419.5	333.3	370.0	37,711	30,055	32,942	+ 9.6
Pennsylvania	1,336	1,264	1,085	—14.2	43.1	40.8	35.0	3,983	3,615	3,018	—16.5
Tennessee	1	1			.0	.0		3	3		
*Texas	41,030	58,487	66,909	+14.4	1,323.6	1,886.7	2,158.3	116,814	172,980	193,066	+11.6
East Texas Field	11,948	11,362	11,844	+ 4.2	385.4	366.5	382.1	33,280	33,987	34,670	+ 2.0
Rest of E. Texas	2,357	3,615	4,558	+26.1	76.0	116.6	147.0	6,893	10,514	13,085	+24.4
North Texas	4,088	4,416	4,627	+ 4.8	131.9	142.5	149.2	11,750	12,835	13,174	+ 2.6
West Texas	7,365	10,601	14,760	+39.2	237.6	342.0	476.1	20,432	32,296	42,740	+32.3
Tex. Panhandle	2,282	2,895	2,728	— 5.8	73.6	93.4	88.0	6,531	8,854	7,949	—10.2
Gulf C., Upper	7,877	15,932	17,491	+ 9.8	254.1	513.9	564.2	22,301	47,038	50,265	+ 6.9
Gulf C., Lower	3,565	6,063			115.0	195.6		9,776	17,696		
Southwest Texas	2,249	2,353			72.6	75.9		6,331	6,988		
S. Central Texas	642	617			20.7	19.9		1,792	1,810		
S. Texas Total	6,456	9,033	10,901	+20.7	208.3	291.4	351.7	17,899	26,494	31,183	+17.7
Utah								1			
West Virginia	276	270	251	— 7.0	8.9	8.7	8.1	811	783	729	— 6.9
Wyoming	2,357	2,626	3,232	+23.1	76.0	84.7	104.3	7,077	7,907	9,046	+14.4
Total U. S.	112,648	136,552	147,948	+ 8.3	3,633.8	4,404.9	4,772.6	323,753	401,220	427,323	+ 6.5

* Texas data by districts based on A.P.I., and so do not agree exactly with state total, which is on Bureau of Mines basis.

Production, Changes in Stocks, and Indicated Demand for Petroleum and Principal Products

Data from Bureau of Mines for 1941 and 1944; estimated for 1945 with aid of API reports. (Thousands of Barrels.)

ITEM	MARCH				FIRST 3 MONTHS			
	1941	1944	1945	% Dif. '44-'45	1941	1944	1945	% Dif. '44-'45
ALL OILS								
Domestic Production, Total	119,221	144,802	157,448	+ 8.7	343,034	425,256	455,266	+ 7.1
(Daily Average)	3,846	4,671	5,079	+ 8.7	3,811	4,673	5,059	+ 8.3
Crude Oil	112,648	136,552	147,948	+ 8.3	323,753	401,220	427,323	+ 6.5
Natural Gasoline	6,259	8,050	9,300	+15.2	18,379	23,436	27,303	+16.5
Benzol	314	200	200		902	600	640	+ 6.7
Imports, Total	8,779				21,342			
Crude	3,821				9,985			
Refined	4,958				11,357			
Change in Stocks	—836	—5,339	+880		—11,626	—11,382	—16,634	
Stocks Beginning of Period	558,823	478,011	459,575	— 3.9	563,954	484,054	477,089	— 1.4
Stocks End of Period	557,987	472,672	460,455	— 2.6	552,328	472,672	460,455	— 2.6
(Days' Supply)	144	98	91	— 7.1	140	99	88	—11.1
Refinable Crude	267,005	236,530	223,782	— 5.4	247,499	236,530	223,782	— 5.4
Heavy Crude in California	11,776	6,766	5,897	—12.8	10,179	6,766	5,897	—12.8
Natural Gasoline	5,331	4,389	4,200	— 4.3	4,275	4,389	4,200	— 4.3
Refined Products	273,875	224,987	226,576	+ 0.7	290,375	224,987	226,576	+ 0.7
Demand exclusive of imports	120,057	150,141	156,568	+ 4.3	354,660	436,638	471,900	+ 8.1
(Daily Average)	3,873	4,843	5,051	+ 4.3	3,941	4,798	5,243	+ 9.3
Demand, inclusive of imports	128,836				376,002			
CRUDE OIL—								
Demand by Source—								
Domestic Production	112,648	136,552	147,948	+ 8.3	323,753	401,220	427,323	+ 6.5
(Daily Average)	3,634	4,405	4,773	+ 8.3	3,597	4,409	4,748	+ 7.7
Imports	3,821				9,985			
Change in Stocks, Refinable	+1,833	—5,188	+4,811		+2,166	—5,232	+2,920	
Stocks, Beginning of Period	276,948	241,718	218,971	— 9.4	276,615	241,762	220,862	— 8.6
Stocks, End of Period	278,781	236,530	223,782	— 5.4	278,781	236,530	223,782	— 5.4
(Days' Supply)	78	52	48	— 7.6	78	53	47	—11.3
Demand, exclusive of imports	110,815	141,740	143,137	+ 1.0	321,587	406,452	424,403	+ 4.4
(Daily Average)	3,575	4,572	4,617	+ 1.0	3,573	4,467	4,716	+ 5.6
Demand, inclusive of imports	114,636				331,572			
Demand by Use:								
Run to Stills, Total	111,059	137,902	147,042	+ 6.6	322,187	398,056	425,228	+ 6.8
(Daily Average)	3,583	4,449	4,743	+ 6.6	3,580	4,374	4,725	+ 8.0
Domestic	107,220	135,027	142,542	+ 5.6	311,814	389,440	412,128	+ 5.8
Foreign	3,839	2,875	4,500	+56.5	10,373	8,616	13,100	+52.0
Exports	2,058				4,946			
Transfers to fuel oil stocks, used as fuel, and losses	1,519	6,500	7,000	+ 7.7	4,439	19,292	20,500	+ 6.3
Demand, exclusive of exports	112,578				326,626			
Demand, inclusive of exports	114,636	144,402	154,042	+ 6.7	331,572	417,348	445,728	+ 6.8
(Daily Average)	3,698	4,658	4,969	+ 6.7	3,684	4,586	4,953	+ 8.0
MOTOR FUEL—								
Production, Total	54,221	60,145	66,823	+11.1	156,760	174,616	195,154	+11.8
(Daily Average)	1,749	1,940	2,156	+11.1	1,742	1,919	2,168	+13.0
Imports	4				4			
Change in Stocks	+2,912	+1,410	+2,442		+7,041	+10,159	+13,557	
Stocks, Beginning of Period	93,920	78,254	88,989	+13.7	83,647	69,505	77,874	+12.0
Stocks, end of period	96,832	79,664	91,431	+14.8	90,688	79,664	91,431	+14.8
(Days' Supply)	59	42	44	+ 4.8	54	44	45	+ 2.3
Finished Gasoline	91,501	75,275	87,231	+15.9	86,413	75,275	87,231	+15.9
Natural Gasoline	5,331	4,389	4,200	— 4.3	4,275	4,389	4,200	— 4.3
Demand, exclusive small imports	51,309	58,735	64,381	+ 9.6	149,719	164,457	181,597	+10.4
(Daily Average)	1,655	1,895	2,077	+ 9.6	1,664	1,807	2,018	+11.7
GASOLINE—								
Production (Straight run, cracked, natural blended)	51,950	58,430	64,891	+11.1	149,964	169,756	189,289	+11.5
(Daily Average)	1,676	1,884	2,093	+11.1	1,666	1,865	2,103	+12.8
Percent yield, str. run, cracked	43.4	38.5	39.7		43.2	38.8	40.2	
Imports	4				4			
Change in Stocks, Finished	+2,892	+1,266	+2,392		+13,558	+10,311	+13,609	
Stocks, beginning of period	88,609	74,009	84,839	+14.6	77,943	64,964	73,622	+13.3
Stocks, end of period	91,501	75,275	87,231	+15.9	91,501	75,275	87,231	+15.9
(Days' Supply)	58	41	43	+ 4.8	60	43	44	+ 2.3
Demand, exclusive small imports	49,058	57,164	62,499	+ 9.3	136,406	159,445	175,680	+10.2
(Daily Average)	1,583	1,844	2,016	+ 9.3	1,516	1,752	1,952	+11.4
KEROSINE—								
Production	6,033	6,960	7,329	+ 5.3	18,582	20,444	20,235	— 1.0
(Daily Average)	195	225	236	+ 4.5	206	225	225	
Percent yield from crude	5.4	5.0	5.0		5.8	5.1	4.8	
Imports	43				43			
Change in Stocks	—910	—682	—287		—2,788	—2,792	—4,023	
Stocks, beginning of period	7,634	7,249	7,414	+ 2.3	9,512	9,359	11,150	+19.1
Stocks, end of period	6,724	6,567	7,127	+ 8.5	6,724	6,567	7,127	+ 8.5
(Days' Supply)	30	27	29	+ 7.4	28	26	26	
Demand, exclusive small imports	6,943	7,642	7,616	— 0.4	21,370	23,236	24,258	+ 4.4
(Daily Average)	224	247	246	— 0.4	237	255	270	+ 5.9
DISTILLATE FUEL OIL								
Production	15,387	19,863	20,564	+ 3.5	47,137	57,661	60,293	+ 4.6
(Daily Average)	496	641	664	+ 3.5	524	634	670	+ 5.7
Percent yield from crude	13.6	14.4	14.0		14.5	14.5	14.2	
Transfers from crude	226	277	275	+ 0.7	630	825	827	+ 0.2
Imports	277				1,181			
Change in Stocks	—4,985	—3,635	—1,496		—13,106	—11,802	—11,444	
Stocks, beginning of period	34,790	33,561	28,385	—15.4	42,911	41,728	38,333	— 8.1
Stocks, end of period	29,805	29,926	26,889	—10.1	29,805	29,926	26,889	—10.1
(Days' Supply)	45	39	37	— 5.1	44	39	33	—15.4
Demand, exclusive of imports	20,598	23,775	22,335	— 6.1	60,873	70,288	72,564	+ 3.2
(Daily Average)	664	767	720	— 6.1	676	772	806	+ 4.4
Demand, inclusive of imports	20,875				62,054			
RESIDUAL FUEL OIL								
Production	27,677	39,738	40,823	+ 2.7	81,501	114,750	117,781	+ 2.6
(Daily Average)	893	1,282	1,317	+ 2.7	906	1,261	1,309	+ 3.8
Percent yield from crude	24.5	28.8	27.8		25.1	28.8	27.7	
Transfers from crude	660	2,472	2,400	— 2.9	2,291	7,697	6,821	—11.4
Imports	4,191				9,121			
Change in Stocks	—1,268	+357	—3,912		—7,670	—3,057	—14,535	
Stocks, beginning of period	82,902	45,070	39,760	—11.8	89,304	48,484	50,383	— 3.9
Stocks, end of period	81,634	45,427	35,848	—21.1	81,634	45,427	35,848	—21.1
(Days' Supply)	85	34	24	—29.4	80	33	23	—30.3
Demand, exclusive of imports	29,605	41,853	47,135	+12.6	91,462	125,504	139,137	+10.9
(Daily Average)	955	1,350	1,520	+12.6	1,016	1,379	1,546	+12.1
Demand, inclusive of imports	33,796				100,583			

new low since World War I times. They still are very close to that 23-year low. It will not be possible henceforth to obtain any substantial part of requirements for crude by drawing further on the greatly depleted stocks.

Stocks Low

Similarly, stocks of residual fuel oil, a vitally needed product, already have been drawn down to the lowest level since the World War I era, and remaining stocks do not offer any important possibilities for meeting demand of the future. The stocks now held are mainly essential working stocks. Inventories of distillate fuel oil are several million barrels lower than at this time in 1941, last prewar year for the United States, whereas demand is much greater; the present stocks being therefore abnormally low in relation to demand. Kerosine also is relatively scarce and will continue so. Total gasoline stocks are about the same as at this time in 1941, but not much more than one half the present inventory is available for civilian use, the remainder being military and other grades. The present stocks of civilian grade gasoline, as of other oils, are mainly essential working stocks, and the civilian market would directly absorb any extra current supply of gasoline released from military channels.

Stocks Used

So thorough has been the utilization of available oils in storage that stocks of all oils stood at the end of the first quarter of 1945 at approximately 460 million barrels, down 12 million from a year previously and down 92 million from March 31, 1941. Since the cutting down of stocks has occurred while demand has ceaselessly increased, the inventory in terms of days' supply has become exceptionally small. The March 31, 1945, stocks of all oils represented only 88 days' supply, compared with 99 days' supply held a year before and 140 days' supply on hand March 31, 1941.

It should be pointed out that the drawing on stocks of all oils by nearly 100 million barrels since 1941, in meeting heavy war requirements, was possible only because of prewar surpluses of crude oil and residual fuel oil and because of the streamlining of the industry's operations under the wartime coordination of the industry's activities. Of the 100 million barrels used from storage about one half was residual fuel oil, largely in California, and the remainder was crude oil, with nearly a half of the crude also coming from storage in California.

Lowest Levels

It is evident that storage oils of virtually all classes and all locations have been reduced practically to the lowest levels possible even under coordinated operation of the industry. End of the wars would bring some decline in petroleum consumption temporarily, but return to competitive conditions can be expected to make larger inventories of crude and products desirable.

Similarly, the heavy drawing on underground storage or crude reserves, previously mentioned, will make it essential after the war to increase those reserves, in order to promote greater operating flexibility as well as to assure adequate dependable supply. This means that there will have to be intensified and probably unprecedented drill-

ing in the postwar period and also similarly intensified pre-drilling exploration to line up still more prospects that will have to be drilled before long. Even under this year's increased drilling program of 27,000 new wells there will be completed several thousand wells less than normal, while in 1942, 1943, and 1944 the completions were greatly subnormal. (Completions averaged 30,500 annually in the last 5 prewar years, 1937-1941, but totaled only 21,500 in 1942, 19,000 in 1943, and 24,000 in 1944, while 27,000 are programmed for 1945.)

Besides drawing heavily on both above-ground and underground reserves, in meeting the great wartime demand for oils, there has been a gradual increase in imports of crude and fuel oils in the past couple of years, following the sharp curtailment of imports when enemy submarines were operating successfully. Imports therefore now represent again a substantial source in fulfilling U. S. demand for oils, while the sharply increased oil industry operations in the Caribbean area are contributing greatly toward prosecution of the wars, thus materially relieving the strain on U. S. producers and refiners.

Stocks of Crude Petroleum in U. S. by Grades, at End of March

(Based on Weekly Reports of U. S. Bureau of Mines)

THOUSANDS OF BARRELS

GRADE OR ORIGIN	March 29 1941	March 28 1942	March 27 1943	April 1 1944	March 31 1945	Change 1941–1945
Pennsylvania Grade	4,291	3,431	2,740	2,465	2,226	—2,065
Other Appalachian	1,400	1,522	1,307	1,396	1,296	—104
Lima-Michigan	1,114	1,549	996	977	954	—160
Illinois-Indiana	21,807	19,337	10,747	14,297	14,421	—7,386
Arkansas	2,888	2,977	2,457	2,768	2,655	—233
Kansas	8,961	7,696	8,372	7,642	9,252	+291
Louisiana	12,897	13,669	13,260	14,033	12,937	+40
Northern	4,342	4,223	4,379	3,701	3,140	—1,202
Gulf Coast	8,555	9,446	8,881	10,332	9,797	+1,242
Mississippi	789	2,445	1,272	786	1,102	+313
New Mexico	7,222	7,510	7,190	6,968	7,105	—117
Oklahoma	64,276	50,513	37,465	32,466	30,448	—33,828
Texas	85,178	96,123	105,391	114,905	112,074	+26,896
East Texas	20,561	23,677	24,659	23,433	19,120	— 1,441
West Texas	15,953	23,961	24,006	29,962	31,917	+15,964
Gulf Coast	23,544	25,889	30,011	34,066	32,173	+8,629
Other Texas	25,120	22,596	26,715	27,444	28,864	+3,744
Panhandle	.....	.....	5,345	6,179	5,434	.....
North	.....	.....	7,365	5,845	7,442	.....
South	.....	.....	4,639	5,538	6,641	.....
Other	.....	.....	9,366	9,882	9,347	.....
Rocky Mountain	15,575	16,628	13,553	9,982	6,453	—9,122
California	37,221	38,454	34,306	24,969	20,301	—16,920
Foreign	2,568	1,354	70	1,013	2,558	—10
Total Gasoline Bearing in U.S.	266,187	263,208	239,126	234,667	223,782	—42,405
Heavy in California	11,963	11,336	10,839	6,507	5,897	—6,066
Total in U. S.	278,150	274,544	249,965	241,174	229,679	—48,471

Strained Relieved

For a period in 1944, around the time of the invasion of Western Europe, there was a very great strain on U. S. refineries, as well as oil fields, in supplying the enormous volumes of oils needed, and it was necessary to operate most plants at full capacity over protracted time without pause for normal repairs. It still is necessary to make the fullest practicable use of refining facilities, as requirements for oil products have increased even further. But the strain has been somewhat relieved through completion of additional crude-processing capacity. In March, 1945, refineries of the United States operated at 87 percent of capacity in charging to stills an average of 4,743,000 barrels of crude per day. In March of last year the existing capacity was utilized 91 percent in charging to still 4,449,000 barrels of crude per day. The country's plants at present have a record high capacity of 5,432,000 barrels per day, up more than 500,000 barrels since a year ago and up more than 1,000,000 barrels since this time of 1941. California refineries operated at 87 percent of capacity in March, but the scheduled increase in crude production for the state in May will result in near-capacity operation of the California refineries, heretofore not necessary. East Coast and Texas Gulf Coast plants operated at 92 percent of rated capacity in March, and Louisiana Gulf Coast plants at full capacity, while Illinois-Indiana-Kentucky plants utilized capacity 90 percent. Other interior plants showed lower percentages of capacity used, due in part to lack of sufficient crude or to transportation difficulties. Oklahoma-Kansas-Missouri plants used 81 percent of capacity in March and those of the Rocky Mountains 75 percent.

Demand for Oils Great

Figures presented in accompanying tables show that this year is bringing an increase in oil consumption similar to gains in normal peacetime years, and also that the average gain per year since Pearl Harbor has been about normal, with the sharply expanded military use more than offsetting curtailments of civilian consumption. The industry's operations therefore are currently in general about one third above those of 1941.

In the first quarter of 1945 the total demand for all oils was 8 percent

U. S. Crude Runs to Stills and Percent of Refinery Capacity Used by Districts, March and First 3 Months, 1941, 1944, 1945

Runs from Bureau of Mines, except 1945, from American Petroleum Institute; Capacities from American Petroleum Institute.)

THOUSANDS OF BARRELS

REFINING DISTRICT	CRUDE RUNS IN MARCH: Total Amount Run				CRUDE RUNS IN MARCH: Daily Average Run			REFINING CAPACITY AND USE MARCH: Daily Capacity			REFINING CAPACITY AND USE MARCH: Percent Capacity Used			TOTAL AMOUNT CRUDE RUN TO STILLS FIRST 3 MONTHS			
	March 1941	March 1944	March 1945	% Diff. '44-'45	Mar. 1941	Mar. 1944	Mar. 1945	Mar. 1941	Mar. 1944	Mar. 1945	Mar. 1941	Mar. 1944	Mar. 1945	Jan.-Mar. 1941	Jan.-Mar. 1944	Jan.-Mar. 1945	% Diff. '44-'45
Combined East Coast—Southwest	57,571	71,116	75,559	+ 6.2	1,857	2,294	2,438	2,259	2,483	2,743	82.2	92.4	98.8	167,509	201,017	219,611	+ 9.2
East Coast	17,850	.....	22,541	.....	576	.....	727	643	.....	791	89.6	.....	91.9	50,247	.....	65,456	.....
Inland Texas	5,290	.....	7,082	.....	171	.....	229	280	.....	329	61.1	.....	69.3	15,442	.....	21,072	.....
Texas Gulf Coast	28,164	.....	35,322	.....	908	.....	1,139	1,071	.....	1,237	84.9	.....	92.1	83,309	.....	102,817	.....
Louisiana Gulf Coast	4,000	.....	8,335	.....	129	.....	269	164	.....	260	78.7	.....	103.5	11,933	.....	23,282	.....
North Louisiana and Arkansas	2,267	.....	2,279	.....	73	.....	74	101	.....	126	72.3	.....	58.7	6,578	.....	6,984	.....
Appalachian	4,347	4,679	4,929	+ 5.3	140	151	159	156	177	196	89.7	85.3	81.1	12,691	14,005	14,234	+ 1.6
District No. 1	.....	.....	3,110	.....	.....	.....	100	.....	.....	146	.....	.....	68.5	.....	.....	8,937	.....
District No. 2	.....	.....	1,819	.....	.....	.....	59	.....	.....	50	.....	.....	118.0	.....	.....	5,297	.....
Indiana, Illinois, Kentucky	19,763	23,466	23,914	+ 1.9	638	757	771	743	824	857	85.9	91.9	90.0	56,692	69,280	69,902	+ .9
Oklahoma, Kansas, Missouri	10,214	10,787	11,850	+ 9.9	329	348	382	420	416	469	78.3	83.7	81.4	29,148	31,675	34,529	+ 9.0
Rocky Mountains	2,579	3,399	3,993	+17.5	83	110	129	121	149	172	68.6	73.8	75.0	7,525	9,727	11,034	+13.4
District No. 3	.....	.....	334	.....	.....	.....	11	.....	.....	13	.....	.....	84.6	.....	.....	969	.....
District No. 4	.....	.....	3,659	.....	.....	.....	118	.....	.....	159	.....	.....	74.2	.....	.....	10,065	.....
California	16,585	24,455	26,797	+ 9.6	535	789	864	836	817	955	64.9	96.6	86.6	48,622	72,352	75,918	+ 4.9
Total United States	111,059	137,902	147,042	+ 6.6	3,583	4,449	4,743	4,535	4,866	5,432	79.0	91.4	87.3	322,187	398,056	425,228	+ 6.8

Refinery Production of Major Products and Percent Yield from Crude Run, By Districts

Results in March and first 3 months, 1945, compared with those in like peiods last year and in 1941, last pre-war year for U. S. Figures for 1941 and 1944 are from Bureau of Mines and for 1945 are estimated with aid of A.P.I. weekly bulletins.

THOUSANDS OF BARRELS

DISTRICTS	*Gasoline			Kerosine			Distillate Fuel Oil			Residual Fuel			Lubricants		
	1941	1944	1945	1941	1944	1945	1941	1944	1945	1941	1944	1945	1941	1944	1945
Combined East Coast, Texas Inland, Texas Gulf, La. Gulf, North La. and Ark.															
Production, March	25,096	28,871	31,882	3,690	4,360	4,738	9,130	12,539	12,690	13,872	18,902	19,298	1,512	1,864	1,996
(Daily Average)	810	931	1,028	119	141	153	294	404	409	448	610	623	49	60	64
Percent Yield from Crude	41.0	36.5	37.7	6.4	6.1	6.3	15.9	17.6	16.8	24.1	26.6	25.5	2.6	2.6	2.6
Production, January-March	73,392	81,401	93,706	12,063	12,665	12,897	28,717	35,186	36,672	40,623	53,768	56,477	4,334	5,289	5,719
(Daily Average)	815	894	1,041	134	139	143	319	237	409	451	590	627	48	58	63
East Coast Only															
Production, March	6,821		8,541	713		1,039	3,328		4,073	4,176		6,909	576		699
(Daily Average)	220		275	23		34	107		131	135		223	19		22
Percent Yield from Crude	37.4		36.7	4.0		4.6	18.6		18.1	23.4		30.7	3.2		3.1
Production, January-March	18,825		24,058	2,228		2,631	10,943		12,466	12,846		20,894	1,758		2,030
(Daily Average)	209		267	25		29	122		139	143		232	19		22
Inland Texas															
Production, March	3,423		4,097	280		385	207		492	1,238		1,945	41		21
(Daily Average)	111		132	9		12	7		16	40		63	1		1
Percent Yield from Crude	52.6		48.2	5.3		5.4	3.9		7.0	23.4		27.5	.8		.3
Production, January-March	10,096		12,045	835		1,155	592		1,551	3,437		5,769	96		61
(Daily Average)	112		134	9		13	6		17	38		64	1		1
Texas Gulf															
Production, March	12,405		14,912	1,917		1,934	4,769		6,397	6,784		8,487	677		984
(Daily Average)	400		481	62		62	154		206	219		274	22		31
Percent Yield from Crude	41.9		36.8	6.8		5.5	16.9		18.1	24.1		24.0	2.4		2.7
Production, January-March	37,033		44,393	6,490		5,575	14,833		18,159	19,472		24,390	1,884		2,684
(Daily Average)	411		493	72		62	165		202	216		271	21		30
Louisiana Gulf															
Production, March	1,455		3,398	514		1,147	640		1,496	1,079		1,437	160		206
(Daily Average)	47		140	17		37	20		48	35		46	5		6
Percent Yield from Crude	35.5		36.3	12.8		13.8	16.0		17.9	27.0		17.2	4.0		2.5
Production, January-March	4,573		10,442	1,740		2,873	1,806		3,821	3,153		3,879	407		601
(Daily Average)	51		116	19		32	20		42	35		43	5		6
North Louisiana and Arkansas															
Production, March	992		934	266		233	186		232	595		520	58		114
(Daily Average)	32		30	8		8	6		8	19		17	2		4
Percent Yield from Crude	42.2		34.0	11.7		10.2	8.2		10.2	26.2		22.8	2.6		3.7
Production, January-March	2,865		2,768	770		663	543		765	1,715		1,545	189		343
(Daily Average)	32		31	9		7	6		9	19		17	2		4
Appalachian															
Production, March	2,026	1,970	2,118	288	349	320	443	530	579	660	779	872	502	441	400
(Daily Average)	65	64	68	9	11	10	14	18	19	21	25	28	16	14	13
Percent Yield from Crude	45.6	41.3	42.3	6.6	7.5	6.5	10.2	11.3	11.2	15.2	16.6	17.7	11.5	9.4	8.1
Production, January-March	5,930	6,074	6,288	865	1,002	933	1,304	1,633	1,641	2,037	2,343	2,563	1,412	1,317	1,143
(Daily Average)	66	67	70	10	11	11	15	18	18	23	26	28	16	14	13
Indiana, Illinois, Kentucky															
Production, March	10,575	11,806	12,712	1,072	1,174	1,116	2,051	3,055	2,969	3,860	4,805	4,752	315	435	407
(Daily Average)	341	381	410	35	38	36	66	98	96	125	155	153	10	14	13
Percent Yield from Crude	50.7	47.3	49.7	5.4	5.0	4.8	10.4	13.0	12.4	19.5	20.5	19.9	1.6	1.9	1.7
Production, January-March	30,589	34,605	37,363	3,113	3,519	3,330	6,120	8,761	8,578	11,545	14,639	14,528	941	1,249	1,165
(Daily Average)	340	380	415	34	39	37	68	96	95	128	161	162	10	14	13
Oklahoma, Kansas, Missouri															
Production, March	5,793	5,362	6,330	701	701	749	1,168	1,522	1,762	1,898	1,926	2,140	312	393	427
(Daily Average)	187	173	204	23	23	24	38	49	57	61	62	69	10	13	14
Percent Yield from Crude	53.0	46.0	49.5	6.9	6.5	6.3	11.4	14.1	14.9	18.6	17.9	18.1	3.1	3.6	3.6
Production, January-March	16,104	16,263	18,059	1,831	2,194	2,059	3,361	4,312	5,289	5,264	5,843	6,453	873	1,128	1,256
(Daily Average)	179	179	201	20	24	23	37	47	59	59	64	72	10	12	14
Rocky Mountains															
Production, March	1,424	1,515	1,940	74	71	127	206	364	367	649	938	1,012	12	33	29
(Daily Average)	46	49	63	2	2	4	7	12	12	21	30	33	.0	1	1
Percent Yield from Crude	52.8	42.5	46.0	2.9	2.1	3.2	8.0	10.7	9.2	25.2	27.6	25.3	5	1.0	.7
Production, January-March	4,193	4,582	5,419	210	221	342	601	1,061	962	1,804	2,792	3,019	51	78	74
(Daily Average)	47	50	60	2	2	4	7	12	11	20	31	34	1	1	1
California															
Production, March	7,036	8,906	9,909	208	305	279	2,328	1,853	2,197	6,919	12,388	12,749	160	322	348
(Daily Average)	227	287	320	7	10	9	75	60	71	223	400	411	5	10	11
Percent Yield from Crude	34.7	31.2	31.1	1.3	1.2	1.0	14.0	7.6	8.2	41.7	50.7	47.6	1.0	1.3	1.3
Production, January-March	19,756	26,831	28,454	500	843	674	6,973	6,708	7,061	20,522	35,365	34,741	667	964	1,067
(Daily Average)	219	295	316	6	9	7	77	74	78	228	389	386	7	11	12
Total United States															
Production, March	51,950	58,430	64,891	6,033	6,960	7,329	15,326	19,863	20,564	27,858	39,738	40,823	2,813	3,488	3,607
(Daily Average)	1,676	1,885	2,093	195	225	236	494	641	664	899	1,282	1,317	90	112	116
Percent Yield from Crude	43.4	38.5	39.7	5.4	5.0	5.0	13.8	14.4	14.0	25.1	28.8	27.8	2.5	2.5	2.5
Production, January-March	149,964	169,756	189,289	18,582	20,444	20,235	47,076	57,661	60,293	81,795	114,750	117,781	8,278	10,025	10,427
(Daily Average)	1,666	1,865	2,103	206	224	225	523	634	670	909	1,261	1,309	92	110	116

* Production includes straight run, cracked, and natural blended at refineries. Yield indicates percent of crude runs made into straight run and cracked gasoline.

greater than in the like period of 1944 and 33 percent greater than in 1941, not considering imports in either year. Domestic production of crude oil likewise is up in approximately these same ratios, while increases for natural gasoline production are 16 percent over last year and 48 percent over 1941. Similar increases are indicated for the month of March, compared with 1944 and 1941. Crude runs to stills also show similar increases, those in the first three months of 1945 having been 7 percent higher than in 1944 and 32 percent greater than in 1941.

Especially responsible for the large increases in total demand for petroleum has been residual fuel oil. Demand for that product in the first three months of this year was 11 percent larger than last year and 52 percent greater than in the corresponding months of 1941, disregarding imports in all years. Domestic production of residual fuel in the first quarter of 1945 was 2.6 percent larger than in the similar period of 1944 and 44 percent higher than in 1941.

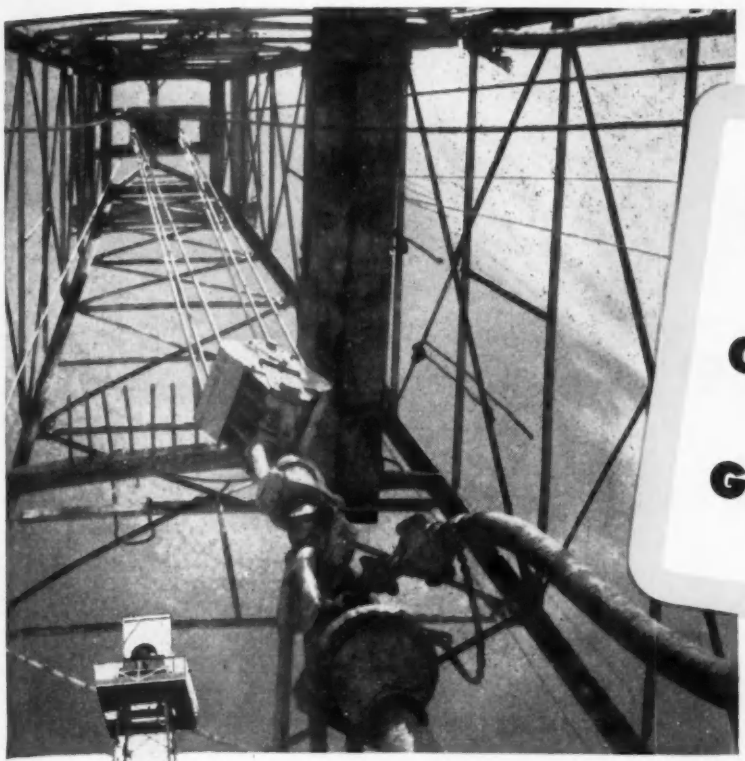
Distillate fuel oil has shown substantial increases in consumption, too, although rationing of supplies to civilians has been a limiting factor. Indicated demand for the first quarter was 3 percent higher in 1945 than 1944 and 19 percent higher than in 1941, not considering imports. The domestic production off this product in the first quarter was nearly 5 percent above last year and 28 percent above 1941.

Increases in demand for kerosine have been similar to those for distillate fuel oil, the first quarter having shown a gain of 4 percent over 1944 and 13 percent over 1941.

More Gasoline Used

Although the use of gasoline was under prewar in the years immediately after Pearl Harbor, because of rationing, it subsequently has increased in response to heavy military needs, and in the first quarter of 1945 was 10 percent higher than in the like period of 1944 and 29 percent higher than in 1941. Since very small amounts of gasoline are imported at any time, domestic pro-

• CONTINUED ON PAGE 54



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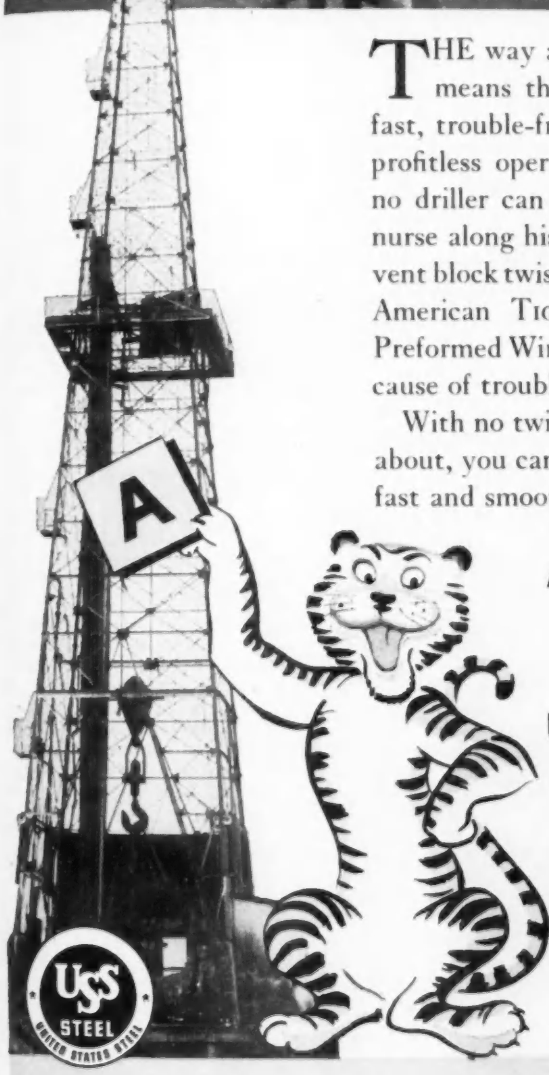

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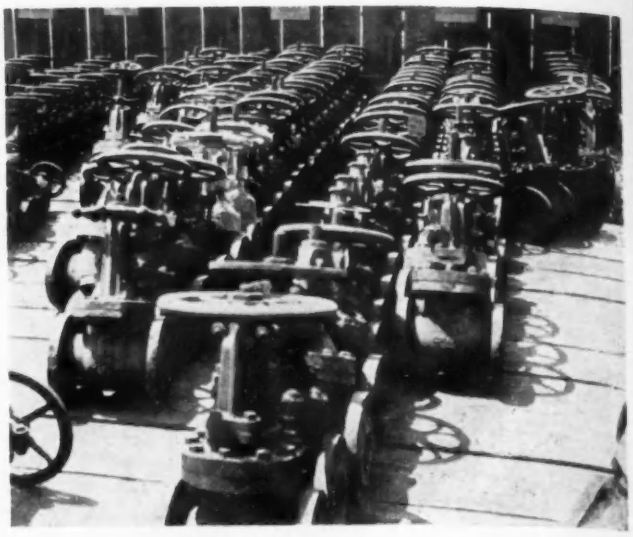


Figure 1. Segregated according to manufacturer as well as size and type, these orderly rows of valves facilitate the choice of specific fittings.

MUCH has been written about the virtue and practicability of salvaging for re-use the many oilfield materials that would otherwise be unobtainable during this period of war, but comparatively little attention has been given to the many short-cuts and time-saving operations that can systematize, simplify, and otherwise bring the salvage work itself up into something more than an anything-to-get-by operation. With a reasonable amount of yard space and a definite, pre-arranged plan of sorting and "filing" of salvaged materials—usable or scrap—much can be accomplished that will make that department carry itself and at the same time make it possible for the various other departments using the materials to profit also.

It was under such a plan of operation that the salvage and repair department of a progressive major producing company organized their salvage work. A system of classification was devised that automatically does the sorting of scrap pipe material almost as soon as it reaches the yard: fittings and valves, on being broken down preparatory to overhauling, are laid out in convenient rows on specially laid-off floored or paved portions of the yard; salvaged valve hand wheels are "filed" in unique shop-made racks; and the varied scrap materials from the repair shops are automatically sorted by having them thrown into special haul-away buckets that permit proper disposal with but a single handling by yard employes.

Run-of-the-field scrap, consisting of broken and twisted pipe with attached fittings, discarded structures salvaged from dismantled field plants, worn and non-usable machinery, etc., upon being brought into the yard, is classified immediately according to the type of material as well as the general dimensions of the separate pieces themselves. Huge plank-lined bins running along part of the length of one side of the yard are segregated into a number of compartments, each walled section being buttressed with sturdy, well-embedded upright sections of salvaged casing (Figure 2.)

Into each bin is meant to be thrown only a certain type of materials. For example, one bin is used solely for thread protectors, another only for cast iron such as broken fittings of that material, engine mounts, pump castings, etc. Another bin is for scrap steel pipe and fittings whose over-all length is less than five feet, and another beside it is for steel material more than five feet long. Included in the latter category are the usual accumulation of awkwardly-handled, multi-armed racks, junked manifolds, welded, twisted brackets, etc., which, if not kept segregated from the other materials, would make subsequent sorting a difficult job.

Figure 2. Much rehandling of scrap is eliminated by these large pipe-buttressed bins which classify material according to dimensions and type.

Classifying By Floored Areas

Breaking down and classifying of valves and flanges of all types also is handled in an efficient manner. Cleaned of some of their grease and dirt, valves are sorted out according not only to size, but their *manufacturer*. This latter feature is very important in the salvage work. All too often, maintenance departments lump their salvaged fittings into sizes only, and while a large percentage of the subsequent field requests may be satisfied with any make of valve, there are numerous instances when the reclaimed materials have to match already installed fittings.

Figure 1 illustrates the orderly fashion in which valves are laid out in long rows, each being headed with a label showing the make of that row of valves. Flange-type valves are segregated from the screw-end type, and when stacked up in the manner illustrated, rapid inspection of valves is simple and inventories of the rapidly-changing stock may be made in a minimum of time with practically no handling of the individual valves.

A similar system for classifying the many sizes and types of flanges is maintained in another portion of the yard. A large rectangular area was paved with an asphaltic road-type material and then marked off with white paint into a series of aisleways. As illustrated in Figure 4, alternate stripes provide a boundary for a storage space in which the flanges may be stacked according to size and type, while the remaining aisles serve as walkways along which workmen may pass while checking stock and for hauling materials in or out on hand-trucks. The aisle system of storing materials of this type has several advantages over the customary bin method. Here, the heavy materials can be moved about by small 2-wheeled hand-trucks with little or no hand work, and the problem of subsequently choosing a certain size or type of fitting is a matter of but a minute's time, all materials being compactly grouped, yet well spaced for quick inspection.

Sorted Hand Wheels Racked

One of the first parts of a valve to suffer damage in the field is the handwheel. In an effort to make procurement of used replacement wheels as

quick and easy as possible, the maintenance department built up a specially-designed rack which is used solely for storing and classifying wheels salvaged from the many and various valves junked or those which have been dismantled for parts. Built largely of salvaged piping and sucker rod materials, the several shelves of the rack are further divided into short sections so that wheels of all types and sizes can be segregated for easy selection.

Pyramidal in shape, the lower, broader shelf is designed to handle the largest diameter wheels, arched dividers of sucker rod being welded between the supporting longitudinal pipe members. The middle and upper racks, accommodating successively smaller wheels, also have arched dividers of sucker rod, but are floored with lengths of shallowly dished light steel sheeting so that even the smallest wheels can be held in an upright position. In addition to the tack-welding which holds this flooring in place, all structural parts of the rack are welded and well braced to support the heavy load. The two-sided rack shown in the foreground of Figure 5 is further strengthened by welding the legs to flat strips of steel which prevent any tendency for the legs to spread under the load.

Figure 3. Special all-welded haul-away buckets afford means of classifying machine-shop waste according to type of materials. Sunken receptacle for steel-waste bucket aids wheelbarrow dumping.

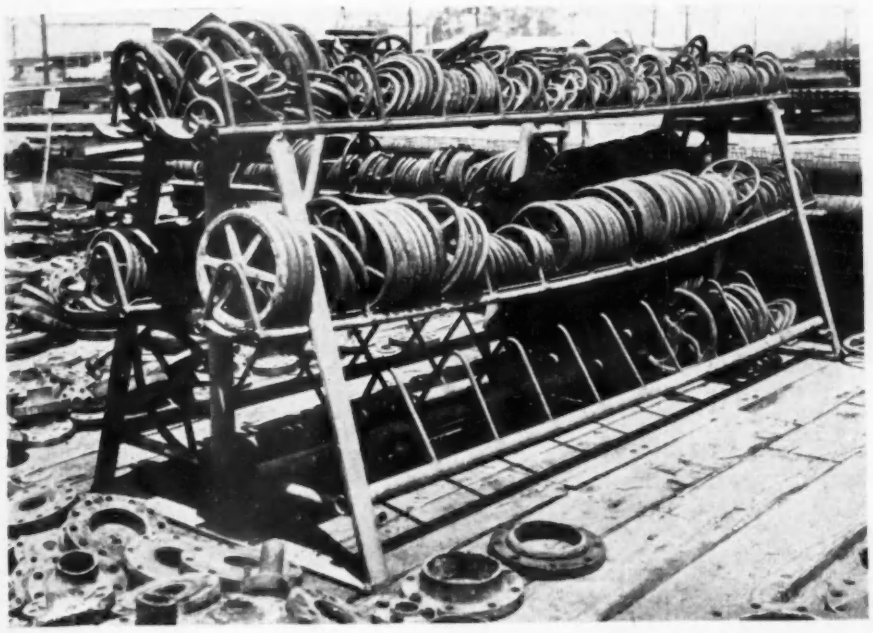


Figure 4. Paved area on which are laid off white-bordered divisions simplify sorting of flanges.

Waste In Haul-Away Buckets

Carrying on still further the theme of classifying materials of all kinds in the yard, the repair departments have devised a means of keeping various types of shop waste materials segregated. Steel, cast iron and copper and brass chips and turnings constitute one of the bothersome but necessary evils connected with machine work. Rapid accumulation of such fine material often necessitates several handlings to segregate roughtly one type of material from another, carry them outside to large bins, then re-shovel it into trucks for disposal. In the system devised in this shop, scrap is segregated and thrown into separate bins just outside the shop door, the most desirable feature of the set-up being the use of specially-constructed, all-welded dump buckets that permit rapid pick-up and subsequent dumping, all without further handling of the materials.

As shown in Figure 3, each bucket is equipped with a heavy bail swung on a trunion near the base and which is free to swing in only one direction, movement in the opposite direction being prevented by heavy lugs welded to the side of the container. To facilitate dumping of heavier steel shavings, of which there is a preponderance coming from the shop, a steel container several inches greater in size all around than that of the bucket dimensions was sunk in the ground and into this the steel-scrap container is placed.

This arrangement not only does away with the usual accumulation of oil-soaked, rusting and otherwise unsightly piles of waste material that usually clutter the rear yard of a machine shop, but the consistently well-sorted materials are far more acceptable as salable junk.

Progress in this key department is reflected in increased efficiency in the several divisions dependent upon the output of this salvage division. The advantage of systematic classification of work and materials also will greatly improve the efficiency of the company.

Figure 5. Special racks designed to hold segregated groups of salvaged valve hand wheels aid in classifying the assortment according to diameter and type.

Control of Semi-Portable Gas Compressors

By P. A. CONDIT, Process Engineer, The Cooper-Bessemer Corporation

MODERN automatic control equipment is rugged and reliable, and is, therefore, easily maintained and adjusted. Above all, it is easily understood.

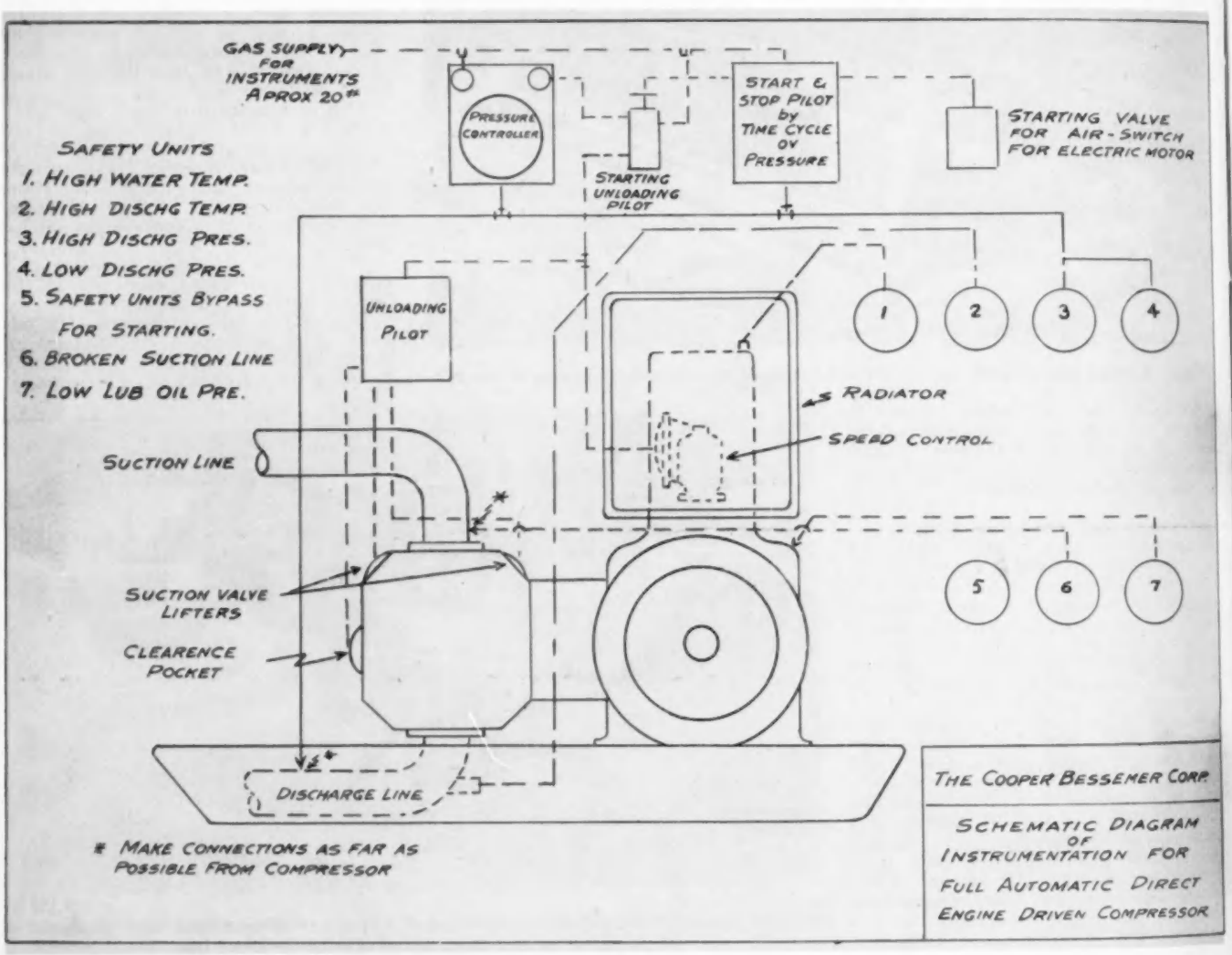
Experienced and forward-thinking men know that much can be gained by the proper utilization and application of controls in any industry. The secret of proper instrumentation is to delegate the application to engineers who are competent to perform this service. The discussion which follows is concerned with the relatively simple application of instrumentation to semi-portable compressors.

Efficient and reliable operation of automatically-operated gas compressors

Modern automatic control equipment is rugged and reliable and therefore easily maintained and simple to adjust

can best be achieved by the use of reciprocating-type units, whether they be motor or engine driven. Reciprocating units are more readily adaptable to full automatic unloading, to speed control, or to a combination of the two, maintaining efficiency throughout the entire range of volume control. In the case of the positive displacement rotary-type compressor, efficient volume regulation is obtained by speed only, and since the speed range normally is limited, inefficient by-pass control must be resorted to below minimum speed. In the case of electric motor-drive rotary-type compressors, normally any volume control is through the use of a by-pass resulting in very inefficient operation for any condition other than 100 percent capacity. Centrifugal compressors are extremely critical to speed, pressures and volume delivered in relation to efficient operation.

In consideration of the wide acceptance of reciprocating compressors, much



SIMPLICITY IS THE FIRST REQUISITE OF SAFETY

Anticipate the unusual conditions for which control should be provided!

Provision for the assembling and disassembling of control equipment with control at the time the equipment has completed its control function and other equipment is needed provides the ability to meet unusual conditions during and subsequent to completion as they arise.

Provision for control during the assembling and disassembling of equipment is a first premise in the designing of Gray Systems of Well Control.

These systems are coordinated methods, providing the highest degree of control and operating efficiency for performing the entire sequence of operations from drilling through producing the well. There is no gap in control when you use Gray Systems of Well Control.

The whole is greater than any of its parts. The problem of meeting unusual conditions disappears when you have the wider choice of equipment made possible by provision for assembling and disassembling equipment with control!

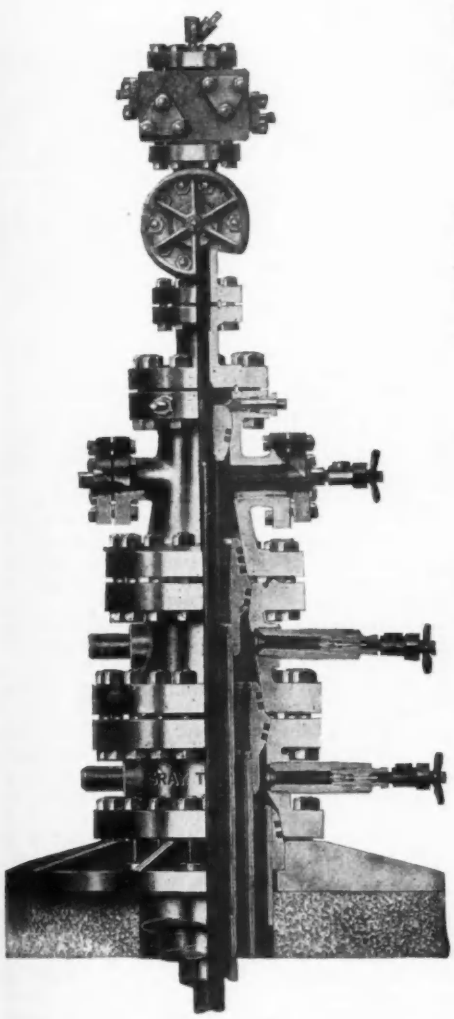


FIGURE 1A

Complete Well Head Assembly equipped with Composite Manifold, Valve Removal, Installation and Removal.

THE WHOLE IS GREATER THAN ANY OF ITS PARTS

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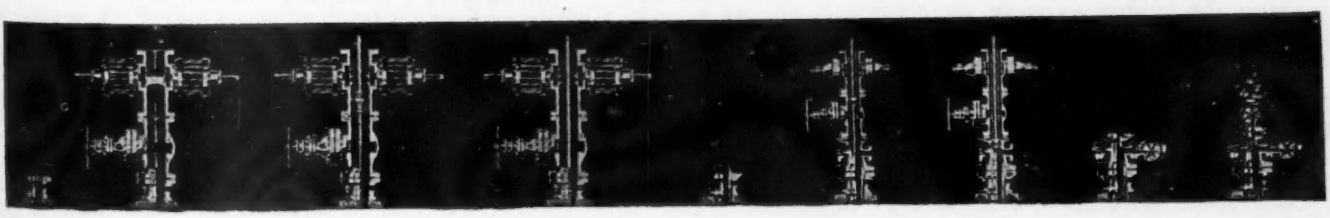

Casing Head Attached | Drilling | Running Casing | Casing Landed | Drilling Control Equipment Removed | Drilling-in and Running Tubing | Tubing Landed | Control Equipment Removed | Manifold Attached

of this article will be related to that type.

Since semi-portable compressor units are usually located at remote locations for recovering residual gas that would otherwise be lost, the gas-engine-driven unit is the logical prime mover. In the past, however, small uits of this type required the constant attention of an operator and, along with housing facilities, etc. made the cost of recovering the residual gas unattractive.

Gas-engine-driven compressors can be equipped to operate fully automatically, requiring only periodic inspection; or semi-automatically requiring an operator for starting and stopping. The number of units in the area, their accessibility, manpower, continuity of operation, and many other factors govern whether control operation should be fully automatic or semi-automatic. This consideration applies equally to engine or motor driven units.

Obviously, the initial cost of a fully automatic unit is somewhat higher than semi-automatic operation, although the percentage cost of the instrumentation for the entire installation is small. If, however, the operation is intermittent and the location inaccessible, fully automatic control operation is preferable. On the other hand, if operation is continuous, or if the location is convenient to personnel operating similar equipment, then semi-automatic control operation should be considered.

Semi-portable units require water and oil cooling by radiator, with the radiator, auxiliaries, controls, etc. all skid-mounted complete for connection to discharge and suction lines.

The accompanying schematic diagram indicates all the instrumentation necessary for fully automatic and semi-automatic lines. A discussion of the various functions follows.

Instrumentation Needed

For a semi-automatic, engine-driven unit the following instrumentation is required:

1. Speed control.
2. Automatic unloading or by-pass control.
3. High water temperature shutdown.
4. High compressor discharge temperature shutdown.
5. Low lubricating oil pressure shutdown.
6. Broken suction line shutdown.
7. Broken discharge line shutdown.
8. High discharge pressure shutdown.

Instrumentation of a semi-automatic unit is relatively simple. The speed control and automatic unloading or by-pass are operated by a master pressure controller to control the suction or discharge pressure, depending upon requirements.

For conditions where the demand is for long periods below minimum speed, automatic unloading below minimum speed should be used. The operation simply stated is thus: The master controller, upon a reducing demand, first reduces speed; after minimum speed is reached and further volume reduction is required, the cylinders are unloaded in steps by the same master controller. The unloading is done by lifting suction valves, opening clearance pockets, or both. The usual procedure is: First, unload 25 percent by opening clearance pocket in head end; next, close clearance pocket while unloading crank end by lifting suction valves, thereby unloading 50 percent; next, open head end clearance pocket for 75 percent unloading; and finally, for total unloading, lift head end suction valves, thereby obtaining five-step unloading.

By-pass demand control, in conjunction with speed control, is normally used where conditions are such that the variable demand is normally within the speed control range. The by-pass control procedure occurs after minimum speed is reached and in the same sequence as unloading, except that the control is straight line instead of steps. The automatic by-pass is normally a diaphragm motor valve located between the discharge and suction headers. Where conditions will permit, automatic by-passing is much simpler and cheaper than unloading.

High water temperature shutdown, item 3, serves to shut the unit down in case of excessive cooling water temperature.

High compressor discharge temperature shutdown, item 4, is not imperative but does stop the unit in case of broken or inoperative compressor valves.

Low lubeoil pressure shutdown, item 5, stops the unit in case of lubricating oil failure.

Broken suction line shutdown, item 6, serves to stop the unit in case of abnormally low suction pressure (in case of positive suction head), or abnormally high suction pressure (in case of vacuum suction head). This is to protect against pumping air into a gas system.

Broken discharge line shutdown, item 7, stops the unit on abnormally low discharge pressure for obvious reasons.

High discharge pressure shutdown, item 8, is to protect against accidental closing of the discharge line valves, or plugging.

Equipment Needs

For an engine-driven fully automatic unit all of the equipment for semi-automatic operation is required, plus the following:

1. Automatic stop (by time cycle or line pressure).
2. Automatic start (by time cycle or line pressure).
3. Safety equipment starting by-pass.
4. Engine starting equipment.

A fully automatic unit, in addition to the equipment previously discussed, requires additional equipment that does not necessarily complicate the operation but is subject to more consideration as to application requirements. Referring to items 1 and 2, the type of automatic start and stop equipment depends entirely on the location requirements. For example, these functions may be accomplished by the utilization of line pressure variations, flow rates, or stictly on a time schedule to correspond to high and low main line delivery rates. Other than to state that specific conditions can be fulfilled, a discussion of this particular phase is beyond the scope of the present article.

Referring to item 3, safety equipment starting by-pass, this, although simple, is mentioned because of such questions as, "How do we start with no oil pressure if no oil pressure shuts the engine down?" The answer is that by the utilization of the safety equipment by-pass, all safety features in the operative position when the unit is down are automatically by-passed upon starting and are restored to safety operation after a short delay.

Engine starting equipment, item 4, depends upon several requirements—as do the starting methods mentioned under items 1 and 2—such as type of engine, size of unit, use of electric or air starting, etc. Regardless of the method used, the starting equipment is directly tied in with the stop and start procedure.

Requirements

Semi-automatic electric motor-driven units require the following instrumentation:

1. Automatic unloading control.
2. High water temperature shutdown (if compressor cylinder cooling is required).
3. Low lube oil pressure shutdown.
4. Broken suction line shutdown.
5. Broken discharge line shutdown.
6. High discharge pressure shutdown.
7. High discharge temperature shutdown.

The same equipment which was discussed for the semi-automatic engine-driven unit is required except for the demand control. Speed control normally cannot be applied to the motor-driven unit, hence demand control is by automatic unloading only, usually five steps, as previously discussed for compressor cylinder unloading. In rare instances, by-pass control may be used but generally should not be considered.

Fully automatic motor-dvine units require all the equipment discussed above under semi-automatic motor-driven units and in addition the following:

1. Automatic stop (by time cycle or line pressure).
2. Automatic start (by time cycle or line pressure).
3. Safety equipment starting by-pass.
4. Automatic motor starting equipment.
5. Three-start interrupting relay.

For the electric-driven fully automatic unit the stop and start method and safety features are as discussed for the fully automatic engine-driven unit, and the problems are identical. The motor starting equipment, however, is simpler than the engine starting equipment. It usually consists of a cross-line starter operated in conjunction with a three-start interrupting relay so in case of trouble the unit will make three starts before positively staying off the line, in which case the relay requires manual resetting. In the case of engines, this safety feature is usually taken care of by the starting battery or starting air becoming exhausted.

Automatic Starting

Both engine and motor driven units, which operate automatic, are automatically started without load, and are automatically loaded only after proper speed has been attained. The equipment needed depends upon the instrumentation necessary to meet specific applications.

The lubricators for compressor and power cylinders, if required, are usually automatically filled from the main lubricating oil system.

The above types of control, as discussed, require standard equipment only and are applications of instrumentation that are in general everyday use. The only thing new about the whole program is the application, which in itself is relatively simple. A large number of installations of this type of equipment have been made in the past several years in widely diversified industries, and a large percentage of the equipment has been placed in the hands of personnel entirely unfamiliar with it. Results in all cases have been highly successful.

...*again three more*

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Oil Field Wages Highest in History

THE straight-time average hourly wage now paid workers in oil field producing and drilling operations is the highest in history of the industry. A survey made by the Bureau of Labor Statistics, United States Department of Labor, shows that the average hourly wage of oil field workers was $1.07 in April, 1944, an increase of five cents over the top for 1943. While the figures are a year old, the industry undoubtedly is paying as high, if not even higher, wages to its field workers today. The survey covered only Texas, Oklahoma and Louisiana, but conditions in these states are believed to be representative of a good share of the industry, and therefore are typical for the industry as a whole.

The survey, based on a study of the wages paid 22,907 male workers employed by 355 oil companies, reveals that the war has brought about numerous changes in policy and in scope or method of operation. The major labor adjustment between April, 1943, and April, 1944, was an increase in the number of hours in the average workweek. There also was evidence of a considerable amount of upgrading of labor, and a reduction in size of drilling crews. Reports frequently mentioned the elimination of one of the derrick floormen and the distribution of his duties among the remaining personnel; the operation of two tours and sometimes only one, instead of the customary three-tour drilling crew arrangement; the staying over of one or two men of a 5-man crew for a double shift; a trend toward "mileage" allowances for employes living at a distance from their work.

Average Hourly Earnings of All Field Workers

AREAS	April 1943	April, 1944
Southwest	$1.02	$1.07
Texas	1.03	1.07
Texas Panhandle	1.01	1.04
West Texas	1.03	1.07
North Texas	.95	1.03
East Central Texas	1.04	1.08
Southwest Texas	1.04	1.08
Texas Gulf Coast	1.06	1.10
Louisiana	1.02	1.09
North Louisiana	.99	1.05
Louisiana Gulf Coast	1.05	1.12
Oklahoma	.99	1.04

The reports also mentioned an increase in the number of part-time workers at all levels and in all classifications, and the handling of additional wells by pumpers and switchers. Though the number of boys and old men hired during wartime has been greater than usual, the employment trend away from the intermediate age groups, both in drilling and production, has been less marked than in industries less essential to the war effort.

Age Differences

Substantial age differences distinguish the production and drilling branches of the oil industry, as indicated by investigations completed by the Subcommittee on Manpower, Petroleum Administration for War, District 3. In May, 1944, the age distribution of 15,057 production workers in the four States of Arkansas, Louisiana, New Mexico and Texas, was as follows: 2 percent under 26 years, 7 percent between 26 and 30 years, 26 percent over 30 but under 38 years, and 65 percent over 38.

The corresponding percentages for 5559 workers in drilling operations were: 7 percent under 26 years, 13 percent between 26 and 30 years, 35 percent over 30 but under 38 years, and 45 percent over 38. One large Texas company, for example, reports the average age for its crew members as follows: Drillers 38, firemen 36, derrickmen 32, floormen 32. Another company, reporting only its Texas Gulf Coast workers gives corresponding averages of drillers 44, firemen 41, derrickmen 36, and floormen 34.

Oil field workers in the Southwest are characterized by the report as typically "rural, male, energetic, migratory, and married."

Responsibility of the driller is emphasized and his long period of training makes it impossible to substitute less experienced men in his place. "He is, for example, on duty seven days of the week, responsible for the safety of the crew, charged with the care of the costly equipment of which the rig is composed, threatened with emergencies created by high gas pressures, blowouts, fire, broken cables, overhanging weights, and unexpected geological formations. He labors under continuous strain and danger. A moment of fatigue or carelessness may result in his breaking a leg or smashing an arm. By dropping a string of pipe he may cost his company from $5000 to $25,000. Typically, he has served an apprenticeship as a roughneck, slipping and shuffling about ankle-deep in mud over many a derrick floor. He knows intimately every operation performed in the field and is somewhat older than his associates."

Comparison of Wages

The wages paid by large companies were shown to be consistently higher than those paid by the small ones. Also, companies operating under bargaining agreements with unions, generally the larger companies, paid higher wages than those without such agreements.

Wages were paid exclusively on a time-rate system. No incentive system was reported on any operation.

The average increase in five cents per hour for all workers in the 3-state region was supported by individual state increases as follows: Louisiana, 7 cents;

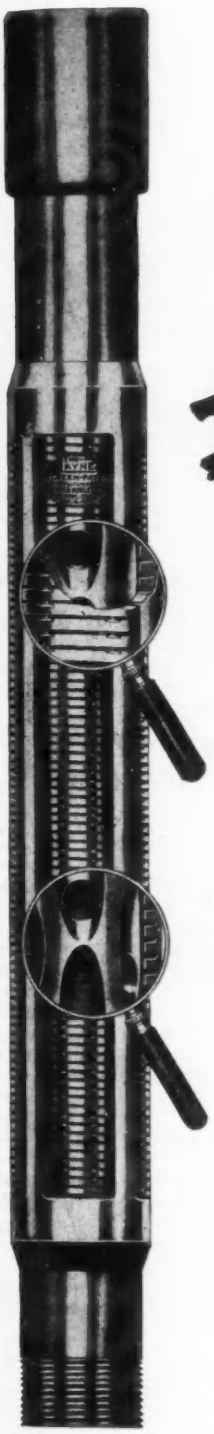
Average Hourly Earnings[1] of Male Workers in Selected Occupations in Petroleum Drilling and Production, by Size of Company and by Union and Non-Union Companies, April, 1943 and April, 1944

OCCUPATION	AVERAGE HOURLY EARNINGS									
	Small Companies (9 to 50 Employes)		Medium-size Companies (51 to 250 Employes)		Large Companies (251 or more Employes)		Companies With Union Agreements		Companies Without Union Agreements	
	1943	1944	1943	1944	1943	1944	1943	1944	1943	1944
All Selected Occupations:										
Number[2]	4,709	3,722	4,934	6,480	12,038	12,705	7,084	7,496	14,597	15,411
Percent	21.7	16.2	22.8	28.3	55.5	55.5	32.7	32.7	67.3	67.3
Derrickmen	$0.95	$1.05	$1.00	$1.06	$1.09	$1.14	$1.22	$1.22	$0.99	$1.07
Drillers, cable	1.11	1.16	1.21	1.22	1.23	1.26	1.40	1.32	1.13	1.19
Drillers, rotary	1.43	1.51	1.48	1.52	1.61	1.65	1.80	1.81	1.47	1.53
Drillers' helpers, rotary, not otherwise classified	.91	.97	.93	1.00	.98	.99	.71	.....	.93	.99
Firemen, rotary	.96	1.02	.98	1.04	1.09	1.12	1.17	1.16	.99	1.04
Floormen, rotary	.96	.98	.93	.99	1.05	1.06	1.14	1.14	.95	.99
Gang pushers	1.06	1.08	1.12	1.18	1.21	1.22	1.20	1.23	1.14	1.16
Maintenance men, class A	.96	1.12	1.01	1.14	1.02	1.25	.98	1.21	1.02	1.21
Maintenance men, class B	.96	.84	1.01	.99	1.02	.98	.98	1.07	1.02	.97
Pumpers and switchers	.80	.82	.94	.95	1.07	1.07	1.08	1.10	.93	.94
Roustabouts	.73	.74	.86	.91	1.03	1.04	1.06	1.06	.86	.89
Tool dressers	[3]	1.01	[3]	1.04	[3]	1.06	[3]	1.02	[3]	1.03
Truck drivers, under 2½ tons	.69	.69	.70	.84	.99	1.05	.98	1.06	.76	.90
Truck drivers, 2½ tons and over	.88	.83	.99	.95	1.06	1.11	1.10	1.15	.98	.93
Watchmen	.50	.45	.64	.52	.72	.90	.84	.96	.60	.54

[1] Exclusive of premium payments for overtime and night work.
[2] Numbers reported for 1943 exclude 124 workers in occupations not shown in this table.
[3] Data not available.

for more than a quarter of a century—

"TOPS" below the casing



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Average Hourly Earnings[1] of Male Workers in Selected Occupations in Petroleum Drilling and Production in Louisiana, Oklahoma and Texas, April, 1944

OCCUPATION	Louisiana				Oklahoma				Texas			
	No. Workers	General Avge	Lowest Avge	Highest Avge	No. Workers	General Avge	Lowest Avge	Highest Avge	No. Workers	General Avge	Lowest Avge	Highest Avge
Derrickmen	234	$1.13	$0.80	$1.26	281	$1.04	$0.95	$1.19	1,136	$1.10	$0.72	$1.27
Drillers, cable					72	1.15	.91	1.35	141	1.23	1.00	1.77
Drillers, rotary	245	1.64	1.20	1.87	327	1.53	1.12	1.77	1,323	1.57	1.25	1.87
Drillers' helpers, rotary, not otherwise classified	42	1.02	.75	1.12	171	.98	.90	1.00	736	.99	.80	1.09
Firemen, rotary	163	1.09	.80	1.20	101	1.03	.95	1.15	666	1.08	.88	1.27
Floormen, rotary	540	1.04	.80	1.18	443	1.00	.95	1.12	2,304	1.02	.75	1.18
Gang pushers	83	1.24	.60	1.87	189	1.15	.83	2.30	579	1.20	.61	1.77
Maintenance men, class A	12	1.17	.96	1.24	42	1.16	.99	k35	85	1.24	.63	1.57
Maintenance men, class B	[2]	[2]	[2]	[2]	64	.96	.94	1.11	81	.99	.70	1.16
Pumpers and switchers	444	1.03	.36	1.37	2,204	1.00	.43	1.21	5,021	1.02	.38	1.44
Roustabouts	359	.99	.50	1.12	1,247	.95	.50	1.16	2,821	.97	.30	1.12
Tool dressers					59	.98	.79	1.12	113	1.05	.80	1.33
Truck drivers, under 2½ tons	52	.97	.50	1.09	65	.94	.55	1.12	222	.96	.40	1.31
Truck drivers, 2½ tons and over	13	1.07	.62	1.24	43	.97	.60	1.16	101	.99	.60	1.35
Watchmen	7	.63	.55	.90	18	.66	.24	1.04	55	.72	.19	1.08

[1] Exclusive of premium payments for overtime and night work.
[2] Number of plants and/or workers too small to justify presentation of an average.

Oklahoma, 5 cents; and Texas 4 cents.

The fact that increases occurred in each of the areas seems to imply a fairly widespread increase in rates of pay throughout the industry. General wage-rate increases (those affecting 10 percent or more of a company's employes, or those affecting key occupations) were reported most often among drilling contractors; these companies accounted for 53 percent of the general increases. Approximately 23 percent of all small establishments, 48 percent of all medium-size, and 22 percent of all large companies granted wage-rate increases of the type described. Of the 355 companies studied, 28 percent increased their rates. The greatly accelerated drilling activity that took place throughout the region during the year contributed to the average increases. Also the reclassification of workers to higher-skill jobs at higher rates of pay, was a factor.

By states, the comparison of hourly earnings show that the average wage in Louisiana was $1.09, in Texas $1.07, and in Oklahoma, $1.04. The highest average hourly wage of $1.12 was paid in the Louisiana Gulf Coast area, and the lowest, $1.03, in North Texas.

The survey also reveals that 67 percent of the workers covered in 1944 were employed in jobs paying $1.00 or more per hour, against 58 percent in 1943. Also, in the two years, 10 and 8 percent of the men respectively, were in jobs paying $1.25 or more per hour.

Rotary Driller Highest

Among the 15 individual key occupations studied, that of rotary driller showed the highest average wage, $1.57 per hour. Cable tool drillers averaged only $1.20, ranking below Class A maintenance men at $1.21, and equaled the rate for gang pushers at $1.20. Other averages of $1.00 or more were received by derrickmen, $1.09; rotary firemen, $1.07; tool dressers, $1.03; rotary floormen, $1.02; pumpers and switchers, $1.01; truck drivers, 2½ tons and over, $1.00. Watchmen earned the lowest wage of 70 cents.

The distribution of all employes by wage-rate interval (based on occupational averages within each occupation) reveals that 6.4 percent were in jobs averaging less than 80 cents per hour, 26.6 percent in jobs paying 80 cents to $1.00, and 67 percent in jobs paying $1.00 or more. Ten percent were in occupations averaging $1.25 or more. Comparison with similar figures for 1943 shows an increase in the percentage of workers in the higher rate ranges.

	Percentage Distribution 1944	1943
Under $0.80	6.4	11.9
$0.80 and under $1.00	26.6	30.7
$1.00 and under $1.25	57.0	49.8
$1.25 and over	10.0	7.6
Total	100.0	100.0

Average Hourly Earnings[1] of Male Workers in Selected Occupations in Petroleum Drilling and Production in Texas Areas, by Area, April, 1944

OCCUPATION	Texas Panhandle		West Texas		North Texas		East Central Texas		Southwest Texas		Texas Gulf Coast	
	No. Workers	General Avge	No. Workers	General Avge	No. Workers	General Avge	No. Workers	General Avge	No. Workers	General Avge	No. Workers	General Avge
Derrickmen	39	$1.01	381	$1.10	111	$1.06	56	$1.13	109	$1.14	440	$1.10
Drillers, cable	43	1.21	57	1.23	27	1.26	9	1.24	[2]	[2]	3	1.25
Drillers, rotary	45	1.51	427	1.56	180	1.51	97	1.57	123	1.63	451	1.59
Drillers' helpers, rotary, not otherwise classified	20	.99	129	.99	279	.99	168	.98	48	.97	92	1.02
Firemen, rotary	27	.99	150	1.08	41	1.06	46	1.10	74	1.12	328	1.07
Floormen, rotary	83	.97	773	1.01	150	1.00	116	1.05	246	1.04	936	1.02
Gang pushers	50	1.17	92	1.19	85	1.17	130	1.20	70	1.19	152	1.24
Maintenance men, class A	3	1.12	21	1.16	7	1.07	22	1.18	4	1.18	28	1.40
Maintenance men, class B	10	.96	8	1.05	5	.95	4	.91			54	.99
Pumpers and switchers	434	1.01	735	1.03	759	.95	1,435	1.02	501	1.01	1,157	1.06
Roustabouts	242	.98	478	.99	418	.94	610	1.00	316	.94	757	.97
Tool dressers	36	1.03	44	1.06	25	.97	6	1.00			[2]	[2]
Truck drivers, under 2½ tons	21	.94	71	.90	31	.99	34	.99	27	1.03	38	.96
Truck drivers, 2½ tons and over	4	1.01	18	.96	18	.87	13	1.03	3	1.23	45	1.04
Watchmen	5	.54	10	.73	7	.45	10	.96	[2]	[2]	21	.72

[1] Exclusive of premium payments for overtime and night work.
[2] Number of plants and/or workers too small to justify presentation of an average.

Fullerton Field Gasoline Plant Put in Operation

Phillips Petroleum Company and the Fullerton Oil Company have placed in operation their 10,000,000-foot daily capacity absorption type natural gasoline plant in the Fullerton field, Andrews County sector of West Texas. The plant is near the center of Sec. 17, Block A-32, Public School Lands, and approximately 200 miles of lines, varying from 2 to 24-inch, are required to gather the gas and return a portion of the residue for lease operations. The entire plant output will be handled by a 5-mile 3-inch products line that connects with Phillips Petroleum Company's Hobbs-Borger 8-inch carrier.

Opportunity in Diesel Industry Shown in Book

Diesel Engine Manufacturers Association, 1 North La Salle Street, Chicago 2, Illinois, has published a bulletin on opportunities in the diesel engine industry. The publication contains the boiled-down conclusions reached by the association after its educational committee had conferred with 116 deans and professors of the country's engineering schools.

Titled "What Are the Opportunities for College Men in the Diesel Engine Industry?" the folder points to jobs in diesel engine factories as well as out in the field.

Jobs for designers and in the research field will, for the most part, be open to engineers with master's and doctor's degrees, the folder states.

Fifty-Field Areas Shown In Geological Publication

Shreveport Geological Society, Box 750, Shreveport, Louisiana, has announced publication of "The Important Oil and Gas Fields of South Arkansas, North Louisiana, Mississippi, and Alabama," to be released August 1.

Each of 55 pools is presented individually, accompanied by a map, and where possible, a structural interpretation. The section is illustrated either by cross-section or columnar type section. The history of each field and state of development are outlined, and production statistics are given, together with such other pertinent data as market facilities and processing plants. Also included in the volume are two regional cross-sections; one from north to south through Arkansas and Louisiana, the other from west to east across northern Louisiana and Mississippi.

When ordered and paid for prior to August 1, the price is $10; after that date, $12.50. Only 2500 copies will be printed.

Indian Lands Offered

Sealed bids for oil and gas leases on restricted lands of the Five Civilized Tribes will be received by the superintendent in Muskogee, Oklahoma, up to 10 a.m., May 5. Leases are being offered in Nowata, Tulsa, Creek, McIntosh, Okfuskee, Hughes, Seminole, Pontotoc, Garvin, McClain, Grady, Stephens, Jefferson, Murray, Carter, Love, Marshall and Bryan counties.

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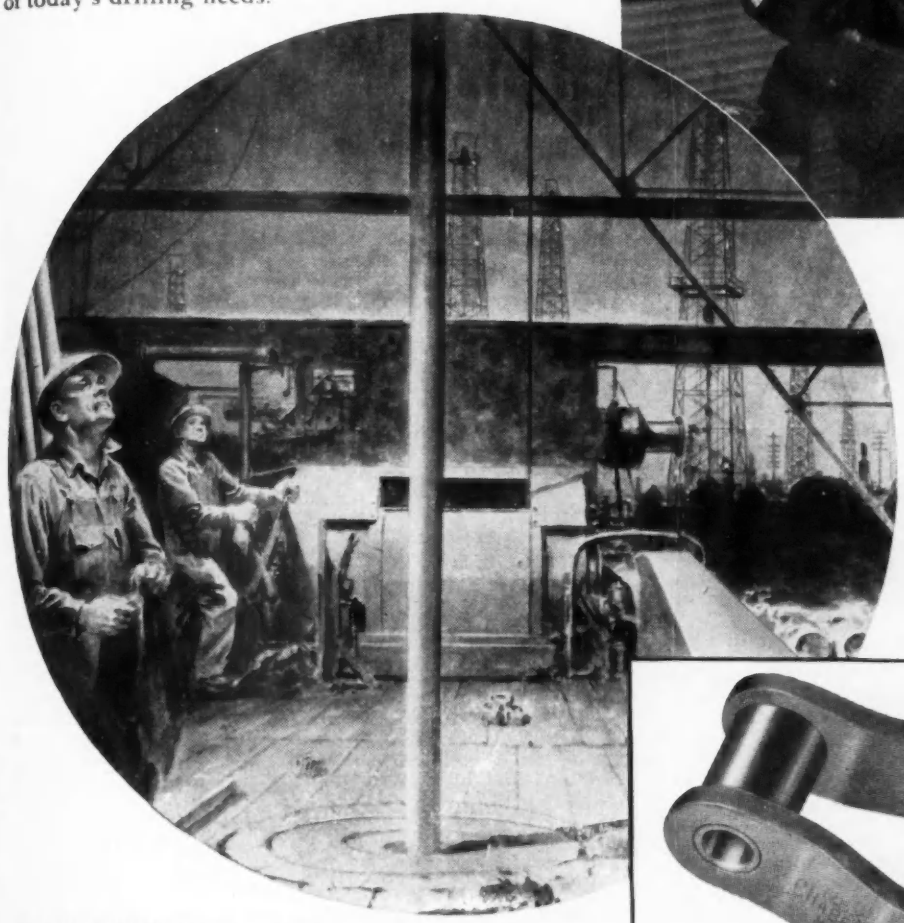

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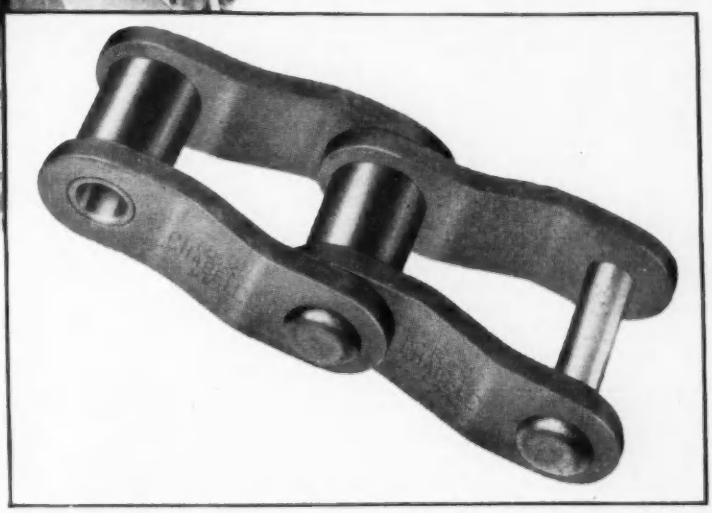

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Postwar Chemical Use of

By BENJAMIN MILLER*

NATURAL gas is important primarily as a convenient fuel, and only in a relatively minor way as matter to be used or transformed. It is with this minor use of natural gas that the present report is concerned, with what one can do with natural gas besides burn it.

Chemically speaking, natural gas is a mixture of compounds, predominantly hydrocarbons, but with minor components including nitrogen, carbon dioxide, hydrogen sulfide and traces of other sulfur compounds, and occasionally helium. Natural gas is never prized for its nitrogen content and natural-gas nitrogen would be used chemically only where it happened to be mixed with atmospheric nitrogen, the mixed nitrogen being obtained from products of natural gas combustion. Some natural gas is very rich in carbon dioxide and such natural gas has been processed for the production of solid carbon dioxide, so-called dry ice. Hydrogen sulfide is an objectionable component whose removal has been practiced for some time. Very recently, hydrogen sulfide removed from natural gas has been treated for the production of elemental sulfur. While the amount of sulphur produced in this way is quite small compared to the total sulphur production, the operation is of great interest and may be practiced on a larger scale in the future.

Uses for Helium

The remaining minor component, helium, has had considerable publicity because of its use in lighter-than-air craft. When war-secrecy restrictions have been lifted we may learn how large a part the helium-inflated units of our Navy played in winning the battle of the Atlantic. Helium has other uses perhaps less spectacular. A synthetic atmosphere containing helium instead of nitrogen has been found particularly useful for deep sea divers and others whose work in compressed air exposed them to the occupational disease called "the bends," which is due to solution of nitrogen in the blood when the worker is exposed to the high pressure and bubble formation as the nitrogen comes out of solution when the worker comes back to a normal pressure environment. Helium has also been suggested as a component of anesthesia mixtures and experiments with such mixtures have been carried on in hospital operating rooms. By keeping the atmosphere away, a protective blanket of helium has also made possible a successful process for arc-welding magnesium, which is so active chemically that it combines not only with oxygen but also with nitrogen at welding temperatures.

Carbon Black

The hydrocarbons which are the principal components of natural gas are composed of carbon and hydrogen, the carbon making up 75 percent by weight of methane, the simplest, and greater proportions of the other hydrocarbons. By far the most important of the chemical uses of natural gas from the standpoint of volume is the manufacture of carbon black. Hundreds of thousands of tons of carbon black are produced each year from hundreds of billions of cubic feet of natural gas. The carbon black industry has been in existence for many years but it is still changing and will doubtless continue to change.

Several processes are in use for the manufacture of carbon black, but until recently the channel process accounted for all but a small fraction of the total production. One distinguishing feature of the channel process is the small yield. Less than 5 percent of the carbon in the gas is recovered as carbon black. This low yield has several effects. It makes it necessary to use large volumes of gas to produce channel-process carbon black at a commercial rate. Since the price at which the product sells is relatively low, that is, a few cents per pound for the great bulk of it, only low-priced gas could be used. The money yield as well as the material yield being low, the use of natural gas as a raw material for channel-process carbon black came to be considered an inferior use. The carbon black industry had to move away from a locality as soon as the price at which natural gas could be sold there for fuel became greater than its value for carbon black manufacture. In some states the use of natural gas for carbon black manufacture was restricted by law.

Other processes were developed which produced more pounds of carbon black per thousand cubic feet but the carbon black produced by these other processes was less desirable for the major carbon black market, that is, for use in rubber tires. The shift from natural rubber to synthetic rubber changed the picture. Carbon black made by other processes, notably by the furnace process, was found to be relatively more suitable for use in synthetic rubber tires than it had been for use in natural rubber tires. The spectacular growth of the synthetic rubber industry was accompanied by a less publicized but tremendous increase in the production capacity for furnace-type carbon black.

Furnace-type carbon black can be made in yields of 25 percent and higher rather than 5 percent or less. Thus, insofar as furnace black can serve purposes formerly exclusively served by channel black, the carbon black industry takes on a new aspect. If five times as much product can be made per unit of gas consumed, the value of natural gas for carbon black production may increase considerably before it hits the ceiling imposed by the market value of the carbon black produced. Furthermore, the high material yield makes it very difficult to consider the production of furnace-type carbon black an economic waste. It may even be that the production of furnace-type carbon black will same day be looked upon as a superior use of natural gas.

Research is stimulated by price differences among the various carbon blacks. The consumer has an incentive to modify his process so as to be able to use cheaper carbon blacks, which are those made in higher yields. Producers of carbon black are stimulated to make their product suitable for varied uses.

An important effect of increased yields is that the amount of gas required for a commercial size plant is much less. A furnace-type carbon black plant using 5 million cubic feet of natural gas per day is quite large enough to be practical. Thus, more locations become possible sites for carbon black plants.

On the other hand, as the yield increases there should be a tendency to move the natural gas to consuming markets and produce carbon black close to the market. The cost of shipping carbon black from points where cheap natural gas is available to consuming centers may exceed the cost of gas in the case of high yield processes. It probably would be feasible to make carbon black near consuming centers if the yield were 30 pounds per thousand cubic feet, because of the cost of moving natural gas by pipe line probably would be less than the cost of moving 30 pounds of carbon black.

There also is to be considered the matter of by-products or concurrent products. Hydrogen is produced along with carbon black by some thermal decomposition processes. The relatively high cost of transporting hydrogen may restrict the location of plants, but there may be sites where both carbon black and hydrogen can be utilized. More about hydrogen uses later.

The possibility exists of producing other by-products along with carbon black. It is quite possible to conceive

* A digest of a report to the Technical and Research Committee Natural Gas Department, American Gas Association.

e of Natural Gas

Institute of Gas Technology

of a process in which ethane-propane mixture from a natural gasoline plant will be partly converted into carbon black, the remainder being a gas having a reasonably high heating value so it may be put in pipe lines for transportation to fuel markets.

Value of Product

Where furnace-type black is produced, the tail gas has so low a heating value it cannot be economically placed into pipe lines for transportation to distant fuel markets, and generally there is very little use for it as a source of energy at the point of production. Near a consuming center, however, a large volume of low heating value gas may be valuable, so it may become economically feasible to utilize the tail gas from a partial combustion carbon black process as a source of heat or of mechanical energy. Then consideration of economic waste could be entirely eliminated. The possibility therefore exists that gas may be transported from a location at which its use for carbon black manufacture would be uneconomical to another location and there converted into carbon black, and the tail gas utilized so as to make the entire process efficient in material use as well as economic.

When natural rubber once more is available in quantity, will channel black regain its predominant position or will the improved position of other types of carbon black be maintained? Any answer must be based on some assumption as to the future relation between natural and synthetic rubber production. However, it seems fairly certain manufacturers of other types of carbon black will succeed, at least to some extent, in modifying their products to make them usable with natural rubber to a greater extent than in the past, and rubber manufacturers undoubtedly will develop means of compounding natural rubber so as to take advantage of the desirable attributes of all types of carbon black. It seems safe to predict that total consumption of rubber of all kinds will increase steadily in the immediate postwar period, so the market for carbon black afforded by the rubber industry should be expected to increase. It also is likely that there will be expansion in the demands for carbon black for other purposes.

Taking the foregoing into consideration, it would appear that greater production of carbon black is to be expected in the future, but on the average, the number of pounds of carbon black obtained per thousand cubic feet of natural gas will also increase, and other raw materials may be used, so the quantity of natural gas used for carbon black production may even decrease. Furthermore, newer processes for carbon black production may make possible the use of gas which could not formerly have been considered for this purpose because the amount available was insufficient for commercial operation. Thus it is reasonable to expect that carbon black production will take less natural gas which might otherwise go into pipe lines in the future than it has in the recent past.

One other point seems worthy of attention. In some places sour natural gas has been used for carbon black production though sweet natural gas could not be so used. At least one large producer of carbon black planned to treat sour gas for hydrogen sulphide removal before using the gas to make carbon black. While the plan seems to have been abandoned, the very fact it could be seriously considered indicates the cost of hydrogen sulphide removal has so greatly decreased that the distinction between sour gas and sweet gas with regard to their use as raw material for carbon black manufacture should be re-examined.

Gas As Hydrogen Source

Production of hydrogen by thermal decomposition of natural gas with concurrent production of carbon black may be considered from the standpoint of carbon black being the principal product or the hydrogen being the principal product. At least one such operation has been going on for many years, the hydrogen being considered the principal product and being used in the manufacture of synthetic ammonia. A plant using about 5 million cubic feet of gas per day and producing 100 tons of ammonia per day is definitely commercial. For such a plant the cost of the natural gas is secondary, since the value of the ammonia produced is so great compared with the value of the natural gas consumed. Low-cost natural gas is undoubtedly desirable but not necessary for such an operation, and if other reasons make it advisable, such a plant could be located at a considerable distance from the producing wells.

When the war emergency required a tremendous expansion of the production of ammonia from which to produce nitric acid for explosives, natural gas came to mind immediately as a source of the necessary hydrogen. The war emergency plants very largely used another process for hydrogen production, one in which natural gas is reacted with steam to form a mixture of hydrogen and carbon monoxide. the carbon monoxide reacted with additional steam to form carbon dioxide and more hydrogen, and the hydrogen and carbon dioxide then being separated. It has been stated about one half of the emergency synthetic ammonia is produced from hydrogen made in this way. Here again the cost of natural gas is not the most important factor, and plants may be located at considerable distances from the producing wells. It is extremely doubtful that synthetic ammonia roduction will continue indefinitely at the peak wartime rate. When the production rate drops the consumption of natural gas for this purpose will drop, although there exists the possibility that some plants using natural gas as a raw material may continue to operate while other plants based on coal as raw material may shut down.

Making Aviation Gasoline

Manufacture of hydrogen from natural gas by reaction with steam was first introduced into this country from Germany in connection with hydrogenation as a method of petroleum refining. Hydrogenation, in the sense of the conversion of low-gravity crude oil or of residual oil to motor fuel by hydrogen addition has not come into extensive use, but hydrogenation as part of a process for manufacturing aviation gasoline has become of considerable importance and such hydrogen is largely made from natural gas.

For the manufacture of aviation gasoline another process has been developed which uses isobutane extracted from natural gas. This process is called alkylation. It is preferred because of its simplicity and superior product. Demand for isobutane for use in alkylation became so great the supply available had to be augmented by converting normal butane to isobutane, the conversion process being called isomerization. The manufacture of aviation gasoline therefore uses hydrogen derived from natural gas, isobutane extracted from natural gas and isobutane produced by isomerization of normal butane extracted from natural gas.

In addition, there are several other processes in which natural gas hydrocarbons are used in making aviation gasoline components.

The future use of natural gas and hydrocarbons extracted from natural gas for the manufacture of aviation gasoline on a large scale seems doubtful. Liberal estimates place the peacetime market for aviation gasoline at no more than 10 percent of the wartime peak. A large part of the aviation gasoline is produced by catalytic cracking units, and it may be that most future aviation gasoline will be so produced. There may be some aviation gasoline made from natural gas. However, oil refineries also produce these gaseous components. Hence, it would appear that natural gas will contribute little to peacetime aviation gasoline. Nevertheless, some companies who have available large quantities of butane, isobutane, propane and ethane undoubtedly are giving serious consideration to postwar manufacture of aviation gasoline in competition with manufacture based on crude oil. Such operations are more

likely to be carried on by companies engaged in oil refining as well.

Synthetic rubber, mentioned previously in connection with carbon black, also is important to the natural gas industry as a consumer of hydrocarbons extracted from natural gas. The greater part of the synthetic rubber is made by combination of butadiene and styrene. Butadiene is being made by dehydrogenation of butane extracted from natural gas. The ethylene used in making styrene is being made by cracking propane extracted from natural gas. However, natural gas plays but a minor part in the synthetic rubber program. Other competitive processes, primarily involving the cracking of refinery gases, are the principal sources for the butadiene. Since the dehydration of butane to butadiene requires removal of twice as much hydrogen as dehydrogenation of refinery butylene, the latter is the preferred raw material. If it were not that butylene is in even greater demand for aviation gasoline there would probably be no production of butadiene from butane at all. Therefore, when demand for aviation gasoline decreases and butylene becomes relatively plentiful, it is reasonable to suppose butadiene manufacture from butane will cease. Production of styrene using ethylene produced by cracking propane may continue, since extraction of ethylene from refinery gases generally is more difficult than extraction of butylene. However, it is to be expected that further developments in processing refinery gases will increase the amount of ethylene extracted, and thereby decrease the production of ethylene by cracking of propane. Of course, if production of synthetic rubber should decrease, demand for natural gas hydrocarbons for such use would be even less.

Non-Fuel Uses

There have been considered so far non-fuel uses of natural gas for production of carbon black, synthetic ammonia, aviation gasoline and synthetic rubber. It has been pointed out carbon black production will probably increase, but that the amount of natural gas required for carbon black production will probably decrease because greater efficiency in production is to be expected and the tendency is toward the use of types of carbon black which can be made in higher yield. Synthetic ammonia production capacity increased enormously for war purposes, but such production will almost certainly be cut very drastically during peace time, so that the amount of natural gas used as a raw material in synthetic ammonia production may be expected to show a marked decrease.

Similarly, the production of aviation gasoline has increased until present production capacity is enormously greater than would have been considered possible a few years ago. Here again, peace time demand will be only a small fraction of the war time demand, and since it is the marginal aviation gasoline which was made from natural gas, generally speaking, the use of natural gas as a raw material for aviation gasoline manufacture may be expected to decrease markedly if not to disappear entirely. The situation with respect to synthetic rubber is not so clear. Synthetic rubber may continue to be produced in large quantities even after natural rubber becomes freely available, and the use of ethyl alcohol as raw material for synthetic rubber production will decline. Nevertheless, the production of butylene by cracking oil will probably be more than sufficient to take care of any demand for butadiene for synthetic rubber. It seems safe to predict, therefore, that even if synthetic rubber production should maintain its present level or slightly increase, the amount of natural gas hydrocarbon used as a raw material for synthetic rubber production will probably decrease.

Non-Fuel Use at Peak

The non-fuel uses of natural gas so far discussed have reached their peak of natural gas consumption or will shortly do so and in the immediate postwar period such consumption will level off and decline. Other non-fuel uses of natural gas may be expected to become increasingly important. Of these the manufacture of chemical products for use as solvents and for the production of plastics, synthetic fibers, coating materials and the like have had the most publicity although very little definite factual information about the hydrocarbon processing operations is generally available. A half dozen companies are actively engaged in the field of converting natural gas and natural gas hydrocarbons to strictly chemical products, though the latter are used by many other companies for the production of a vast number of synthetic materials.

In the discussion of such uses of natural gas, it is necesary to distinguish carefully between natural gas and refinery gases. The chemical industry which has grown up on the basis of refinery gases is already very large and growing rapidly. For the most part the olefins are the raw material of this industry. All these olefins can be made from the natural gas hydrocarbons and, as already mentioned, some of these are being made. However, it has been well said that a synthetic can never supplant a by-product, it can only supplement it. Olefins are by-products of oil refining whereas they are synthetics when produced from natural gas. Those companies utilizing refinery olefins as raw materials may find it profitable to supplement their supply by converting natural gas hydrocarbons into olefins, whereas to compete with olefins which are by-products of oil refining by making olefins from natural gas hydrocarbons can be economically sound only under very special conditions. For the purpose of this report, therefore, it will be sufficient to point out that olefins can be made from natural gas hydrocarbons and that they are starting points for a great variety of important chemicals but that such products are more properly considered chemicals derived from petroleum, rather than chemicals derived from natural gas.

Chlorinated Hydrocarbons

Chlorinated hydrocarbons are among the most important solvents and are used very largely for cleaning of fabrics and degreasing of metals. Some of these chlorinated hydrocarbons can be made as readily from olefins by addition of chlorine as from paraffins by substitution of chlorine for hydrogen, so that they are made from both. Others can be produced more readily from olefins, but there are some which can be produced most economically from the natural gas hydrocarbons, and the use of natural gas hydrocarbons for the production of chlorinated solvents is growing and probably will continue to grow. A large increase of chlorine-producing capacity was generated by the war emergency and much of the new capacity was constructed in the Southwest near supplies of natural gas. It is to be expected that chlorine from these plants will be used to produce chlorinated solvents from natural gas in increasing quantities.

A comparatively recent development has been the production of nitroparaffins by the vapor-phase reaction of nitric acid with propane. The nitroparaffins may serve as starting points for a large variety of organic chemicals, some of which have not been commercially available before, while others have been made by more round-about processes at higher cost. Here again the cost of the propane is a relatively minor item, and the operation need not be conducted near the point of production of the propane.

Organic Compounds

Oxygen-containing organic compounds may be derived from natural gas hydrocarbons by controlled oxidation with atmospheric air. The possibility of producing valuable materials using as raw material only natural gas and air has intrigued chemists for many years, but it was only within the last twenty years that a successful process was worked out. This process produces principally formaldehyde and methanol, although acetaldehyde and other minor products are also obtained. More recently another oxidation process has reached commercial stature. Its principal product is said to be acetic acid, starting material for acetate-type synthetic fibers and plastics. Butadiene, discussed above as principal intermediate in synthetic rubber production, contains no oxygen, but a new plant to produce it is said to employ the aldol process, and aldol is an oxygen-containing compound which can be made from natural gas hydrocarbons by a process involving partial oxidation.

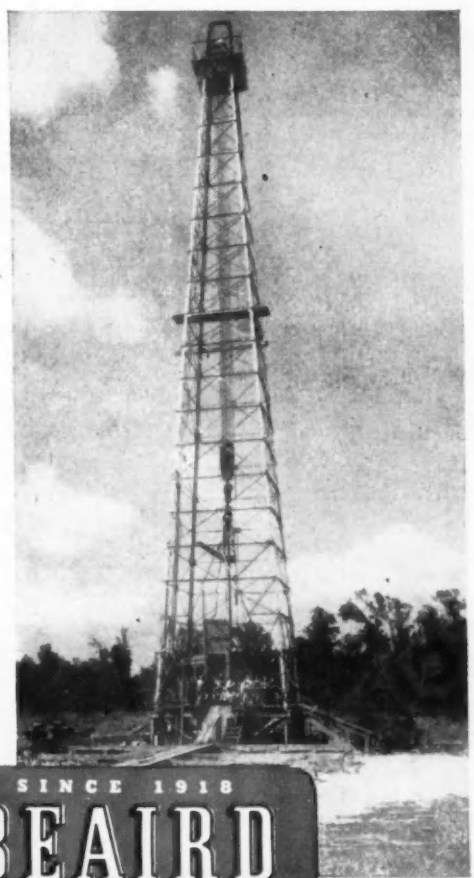
Chemical Uses

The total amount of natural gas and natural gas hydrocarbons used in these strictly chemical ways is not very great. It has been estimated that the prewar annual production of methanol, amounting to 20 million gallons, could have been produced from the gas from a single gas well of 10 million cubic feet daily capacity if conversion efficiencies were nearly perfect. Methanol production is now running at the rate of nearly 80 million gallons per year and of course not all of it is being made from natural gas. A recent estimate of the basic raw materials used to produce resins and plastics in 1941 included 690 million cubic feet of natural gas. While the present production rate for plastics may be double that of 1941, and while plastic production may continue to increase rapidly, it is obvious that plastics cannot for many years to come consume more than a very tiny fraction of the natural gas production. Other specialty chemicals made from natural gas and natural gas hydrocarbons will certainly be less important from the standpoint of gas consumption, although they may be very important in the general economy from the standpoint of the uses to which the products are put.

It might be suggested that chemical

INTERCHANGEABLE FEATURES ON BEAIRD DERRICKS

To speed derrick erection or dismantling, and to facilitate replacement of parts, these three interchangeable features of Beaird derricks offer real advantages to the rig builder



1

BASE LEGS of ALL DERRICKS will FIT ANY CORNER of the derrick. Start with any leg at any corner—the BEARING FIT of the leg end against base plate assures EVEN DISTRIBUTION of leg load.

2

ALL INTERMEDIATE LEGS are interchangeable with ANY SIZE DERRICK. Intermediate legs from 87 fit 136, 136 fit 94 or 122 for ease of erection and speedy replacements on all derricks.

3

ALL CROW'S NESTS are interchangeable on ALL DERRICKS. One crow's nest fits them all, from 87 to 136.

Made to API specifications with maximum plus for greater safety. Silicon steel legs give 35 per cent more working capacity. A near 45-degree angle of bracing for maximum strength. Extra heavy wind bracing in the starting section for added protection under unusual loading conditions.

For economy and versatility, the wide range of interchangeable parts make Beaird derricks hard to beat.

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utilization may conserve gas which would otherwise be lost or wasted. Insofar as the manufacture of strictly chemical products may be concerned, this could only be the case if relatively inexpensive manufacturing equipment can be used, if the cost of processing is quite low, and if the volume of gas required for a manufacturing plant is small. A simple oxidation process which produces a saleable liquid product and otherwise meets these qualifications might be helpful from a conservation standpoint; research to develop such a process would be required.

This discussion of strictly chemical uses of natural gas will be concluded by mention of another avenue of approach. It was pointed out above that synthetic ammonia is being made from hydrogen produced from natural gas by a process which involves the intermediate production of a mixture of hydrogen and carbon monoxide. Hydrogen and carbon monoxide can be used as the raw material for synthetic production of methanol as well as higher alcohols, and a large part of the methanol now produced is made from a mixture of hydrogen and carbon monoxide which is made, however, in water gas machines. It has already been suggested that when the demand for synthetic ammonia decreases, part of the synthetic ammonia capacity will be turned to the production of synthetic methanol since the plant requirements are in some ways very similar. It is therefore possible to look forward to competition within that portion of the synthetic methanol industry based on natural gas, with oxidation of natural gas being used to produce methanol directly in some plants, while in other plants natural gas will be used as raw material from which to produce a mixture of hydrogen and carbon monoxide from which methanol will be produced.

In the production of synthetic methanol from a carbon monoxide-hydrogen mixture it is necessary to use quite high pressures. In studying the effect of pressure changes on this reaction, it was discovered that liquid hydrocarbons could be produced at lower pressures. This was the starting point of the Fischer-Tropsch process which has aroused so much interest in recent years. This process offers a means of converting natural gas into liquid hydrocarbons suitable for motor fuel and thereby a market which could absorb the entire natural gas production. A complete discussion of the Fischer-Tropsch process is outside the scope of this report, but if improvements thought probable by the more optimistic workers in this field should be realized, natural gas would become a more economical source of motor fuel than petroleum.

The attempt has been made to point out those ways in which natural gas is used in addition to its principal use as a fuel and source of energy. The greatest weight has been placed on those uses which take the greatest volumes of natural gas and other uses have been mentioned rather briefly. It has been pointed out that the present principal uses as a group will probably not consume as much natural gas in peace-time as they do at the war-time peak, that the minor uses will probably increase but cannot conceivably increase enough to become really important from the standpoint of natural gas consumption, and that chemical utilization by presently known process cannot be considered as a means to reduce waste of natural gas, though further research may lead to a process applicable to gas which would otherwise be wasted. Finally, attention has been directed to the Fischer-Tropsch process which can be used to make motor fuel from natural gas and which therefore presents the possibility of a market for natural gas which is a fuel market, but which involves chemical processing, and which deserves careful study because it may develop into a major use for natural gas.

Quarterly Statistics

■ CONTINUED FROM PAGE 36

duction has shown increases about the same as those in demand.

The heavy demand for residual fuel oil has necessitated adjustment of refining operations to afford relatively high yields of that product. The yield in March, 1945, was 27.8 percent, which was down from 28.8 percent in March last year but still materially above the 25.1 percent for March, 1941. Yield of distillate fuel oil also was lower than a year ago but still above 1941. Conversely, there was after Pearl Harbor a reduction in yield of gasoline as demand for that product diminished, but the yield now is being adjusted gradually back up. In March, 1945, it was 39.7 percent against 38.5 percent in March, 1944, and 43.4 percent in March, 1941.

Stocks of Major Petroleum Products Held by Refining Companies in the United States at End of March, 1941, 1944 and 1945

(Stocks at refineries, at bulk terminals, in transit, and in pipe lines. Data for 1941 and 1944 from Bureau of Mines monthly reports; for 1945 from weekly reports of American Petroleum Institute.)

THOUSANDS OF BARRELS

DISTRICT	FINISHED AND UNFINISHED GASOLINE Stocks End of March			KEROSINE Stocks End of March			GASOIL AND DISTILLATE FUEL Stocks End of March			RESIDUAL FUEL OIL Stocks End of March		
	1941	1944	1945	1941	1944	1945	1941	1944	1945	1941	1944	1945
Combined East Coast—Southwest	45,673	36,777	41,386	4,236	4,100	4,507	15,836	14,277	13,325	20,111	16,117	13,655
East Coast	21,113	.....	13,781	1,146	.....	2,174	7,998	.....	5,093	8,371	.....	5,498
Inland Texas	2,965	.....	3,029	141	.....	153	188	.....	297	1,601	.....	629
Texas Gulf Coast	17,061	.....	16,701	2,190	.....	995	6,291	.....	5,213	7,376	.....	5,731
Louisiana Gulf Coast	3,681	.....	5,116	556	.....	884	1,119	.....	1,966	2,303	.....	1,529
North La. and Arkansas	853	.....	2,759	203	.....	301	240	.....	756	460	.....	268
Appalachian	3,628	3,394	3,838	139	248	271	350	1,293	494	521	366	392
District No. 1	.....	.....	2,422	.....	.....	238	.....	.....	377	.....	.....	240
District No. 2	.....	.....	1,416	.....	.....	33	.....	.....	117	.....	.....	152
Indiana, Illinois, Kentucky	20,782	20,739	24,086	806	1,279	1,342	2,397	4,703	3,413	2,801	2,784	1,773
Oklahoma, Kansas, Missouri	9,230	8,309	9,604	453	369	459	1,034	1,588	1,670	2,016	1,293	1,334
Rocky Mountains	2,493	2,457	2,613	119	86	139	332	370	370	565	617	663
District No. 3	.....	.....	83	.....	.....	15	.....	.....	15	.....	.....	36
District No. 4	.....	.....	2,530	.....	.....	124	.....	.....	355	.....	.....	633
California	17,116	15,424	17,185	971	485	409	10,060	7,695	7,617	56,885	24,250	18,131
Total United States	98,922	87,100	98,712	6,724	6,567	7,127	30,009	29,926	26,889	82,899	45,427	35,848

U. S. Going Ahead With Synthetic Gasoline Work

Although it will be a long time before American motorists turn to gasoline made from coal or shale, the United States government is going ahead with its program of developing the "know-how" in case of a shortage of natural petroleum.

The United States Bureau of Mines is whipping its gasoline-from-coal-and-shale program into shape. Latest step is selection of a site near Rifle, Western Colorado, for a $1,500,000 200-ton per day oil-shale demonstration plant. The bureau's coal synthetic fuel laboratory already is under construction at Bruceton, Pennsylvania.

Approximately half of the 92 billion barrels of recoverable shale oil estimated to exist in the United States is in the vicinity of Rifle. The new plant will be three miles east of the site of an experimental oil shale mine and retort plant operated by the Bureau of Mines between 1925 and 1929. Aproximately 6000 tons of oil shale were retorted and 3600 barrels of oil produced.

Petroleum Industry Taxes Big Part of Texas Take

The Texas petroleum industry's overall tax bill assessed against its properties and products constitutes nearly 73 cents for every dollar it pays to its employes in wages and salaries, H. J. Struth, economist for The Texas Mid-Continent Oil and Gas Association, declared recently.

Taxes assessed against the Texas petroleum industry's properties and products last year aggregated nearly $241,000,000. This included state, local and federal taxes levied upon its properties, income and products. At the same time, Texans employed by this industry received in wages and salaries the sum of $332,000,000.

Fifty-five percent of the state's tax revenue from all business and property taxes comes directly from the petroleum industry and more than one third of all local taxes are paid by this one industry, Struth declared.

Maguire Closing Office

Maguire Industries, Inc., is closing its exploration offices at Wichita, Kansas, and transferring personnel to Dallas. Tom Johns remains as Kansas representative and E. K. Edminston has resigned as geologist for the company to become a consultant in Wichita.

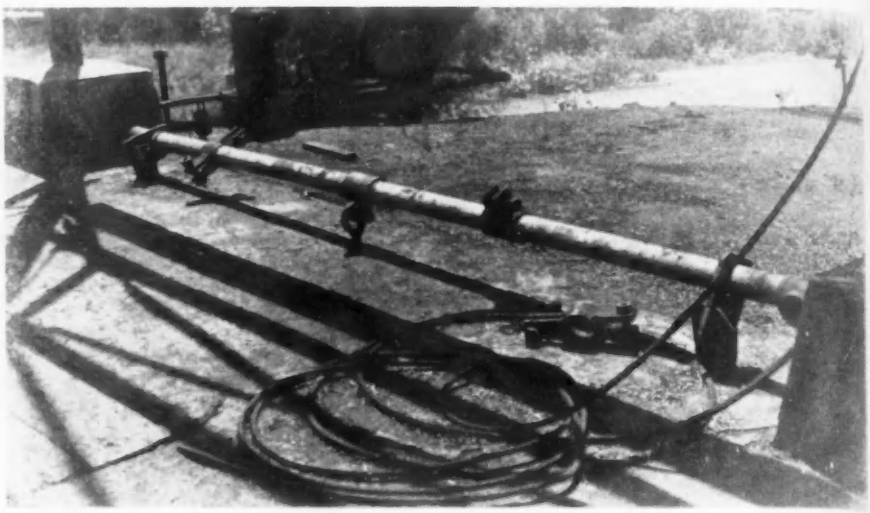
W. W. WILSON BUILDING • HUNTINGTON PARK, CALIFORNIA

PRODUCTION HINTS

Pulling-Unit Tie-Down Eliminates Excessive Spotting Time Losses

WELL SERVICING

An ingenious, inexpensive means of anchoring unitized pulling units is found in the semi-permanent installation illustrated in the photograph. It consists of a horizontal length of 4¾-inch pipe held down by three anchors set in the concrete mat of the derrick floor. Each of the two end anchors consists of a pair of angle irons set vertically side by side and between which is loosely bolted a heavy strip of mild steel plate, the upper end of which has a hole cut in it large enough for the horizontal pipe to be run through it. In the center of the anchor pipe a short sleeve of 5½-inch pipe having a lug welded to it is slipped over the anchor and attached to an eye-bolt anchored in the concrete. Made to slide along the pipe between these two anchor points are two additional lug-equipped sleeves to which the pulling unit turnbuckles are attached.



This flexibility of movement of the sleeves assures rapid rigging up for the pulling unit, there being no problem as to placement of the anchors because of the possible use of several types or makes of units by the company at any future date. Beside the lateral adjustment, several inches of play may be obtained forward or backward due to the short arc through which both anchor tie-downs and turnbuckle lugs may be swung.

$5.00 is paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, P. O. Box 2608, Houston 1, Texas

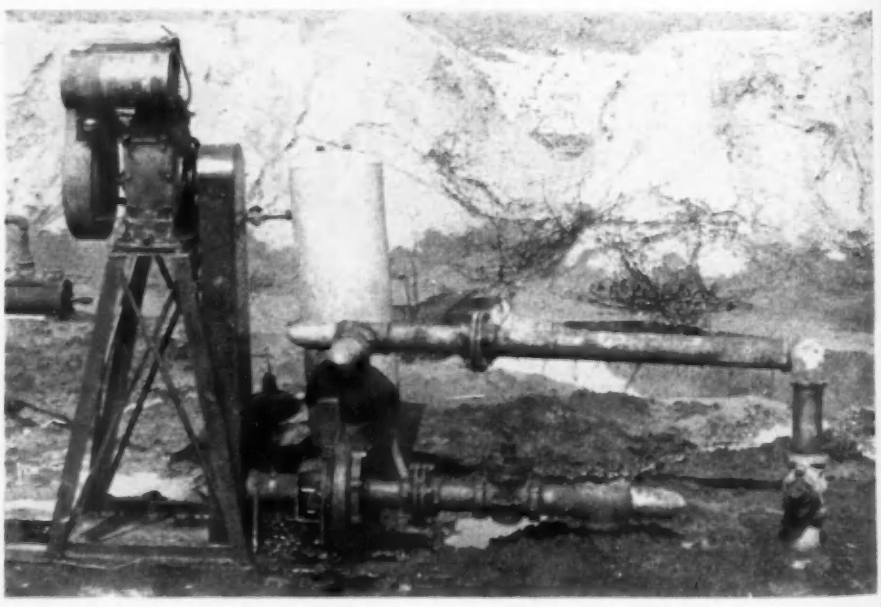
Elevated Power Unit Prevents Flood Shut-Downs

PUMP SETTINGS

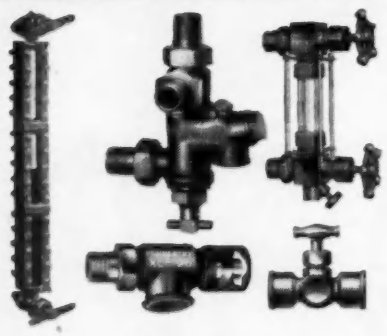
On leases subject to occasional overflow, it is not always necessary to elevate the entire pumping set-up to insure production during the period the lease is inundated. One Illinois producer sets the power unit alone on a framework which puts the engine above flood reach, while the centrifugal pump is mounted in the usual manner on a concrete base flush with ground level.

Drive between the engine and pump is through belt, enclosed in a housing to prevent the throwing of water by the belt when the pump pulley is submerged, with the connection between the gas accumulator tank and the engine mixing valve carried high enough so that it may be adjusted even though the pump and well-head connections are under water.

The elevated stand also simplifies servicing, presenting the work at a height eliminating stooping.



PENBERTHY QUALITY PRODUCTS



Penberthy liquid level gages of various types—injectors—ejectors—all so widely used throughout the oil industry because they have always been dependable under the most severe service conditions.

All are of rugged construction and made by an organization with 57 years experience in the manufacture of quality products.

PENBERTHY INJECTOR CO.
DETROIT, MICH. Canadian Plant WINDSOR, ONTARIO

PRODUCTION HINTS

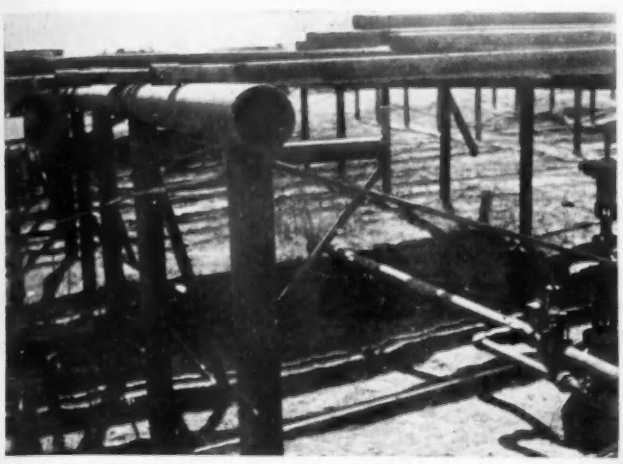
Pipe Racks Provide Auxiliary Storage Space

MATERIAL STORAGE

The problem of where to store conveniently the numerous odd lengths of small piping, rods, used pump barrels, etc., is solved by one production company in devising convenient racks and shelving on the under-side of their yard large-pipe racks. The transverse supporting members being made of salvaged casing and tubing, it was a relatively easy task to weld short horizontal pieces of 2-inch pipe, the latter supported by sucker-rod material bracing, to each of the rack legs on the inside, or sheltered side of the supports in the manner illustrated.

The number of short pipe sections jutting out from the rack is determined by the average length of pipe to be racked at that place, and in this manner a rough classification can be maintained constantly by urging the field personnel to rack the salvaged materials in the proper place, according to the length of the pieces.

This system of racking serves several useful purposes. Instead of having salvaged piping in a common "dump" where it is with difficulty sorted at a later time, these racks encourage the men to "file" the material immediately upon unloading the truck after returning from the field, the proximity of the smaller racks to the large rack making it easy to unload all materials at the same time. Yard neatness is thus combined with classification that will save much time in the future when a certain length or type of material is needed. It conserves yard space by utilizing already existing racking and keeps materials off the ground where they would be subject to rough handling and rusting.



The small racks do not in any way disturb the usual means of racking the heavier pipe stored, providing the smaller shelving is not stacked too high. Should the quantity of small sizes tax the capacity of the upper racks, other small ones may be just as easily built further down the sides of the vertical legs of the large rack.

Knife-Type Bearing Simplifies Rod-Line Operation

ROD-LINE OPERATION

Keeping the jack line bearings, rod lines, etc., well lubricated has always been a problem, especially so if the bearings are hard to get at, such as the pull-line-to-jack-joint on over-pull type jacks. A non-oil type of bearing of low friction has been designed by one operator. Instead of the usual pin-in-journal type of bearing a simple knife type bearing was substituted. The surface upon which the knife edge bears is the jack itself reinforced by an added thickness of ½-inch steel plate.

The jack line end has the usual yoke type of connection but instead of the usual pin a flat piece of ¼-inch plate has been welded across the yoke with the flat side parallel to the jack line. The inward edge of the ¼-inch plate has been filed to a knife edge, thus making a minimum working surface. The yoke was slipped over the jack post in the usual manner and the motion started.

This operator reports that the bearing illustrated has been in service for more than three years and has given no trouble or noise. Inspection showed very little wear.

Where especially abrasive conditions exist, hard-facing both the knife and the notched bearing plate will extend service life indefinitely, and remove danger of breakdown through extended wear of either member of unit.

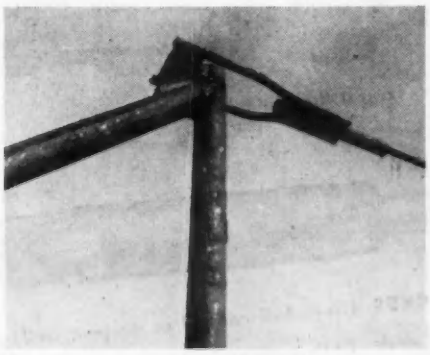


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Fig. F-658

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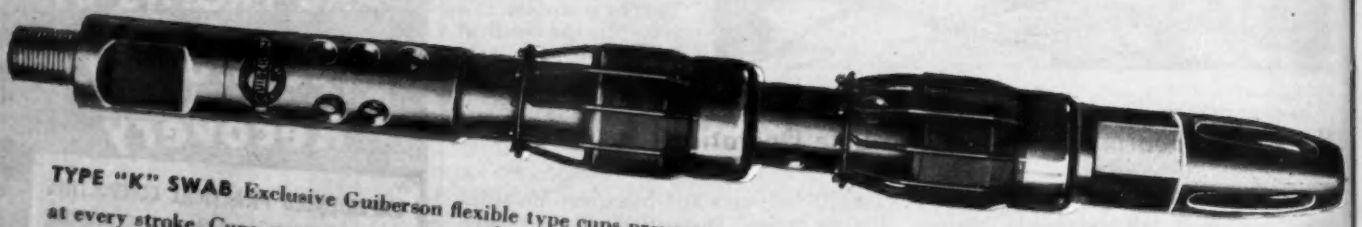
For want of a nail—a battle was lost! For want of a safe, sure tool—a well may be lost! The cost of keeping Guiberson tools constantly on the job for you is so small in comparison with lost time and lost production, that it will always pay big dividends to keep your wells safe with Guiberson tools. Since 1919 the motto of Guiberson has been "It's Better to be Safe Than Sorry."

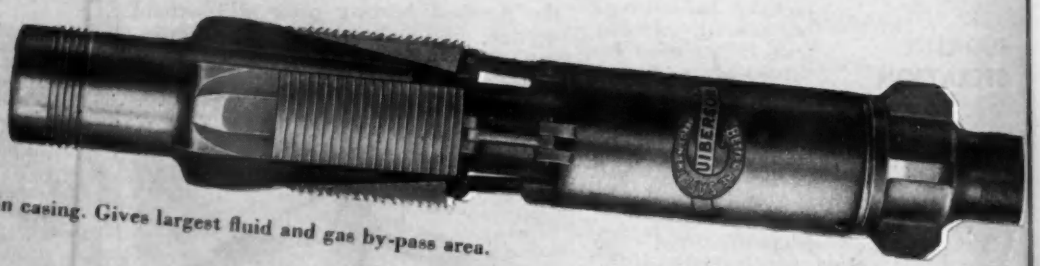
It costs so little to be safe with GUIBERSON OIL TOOLS

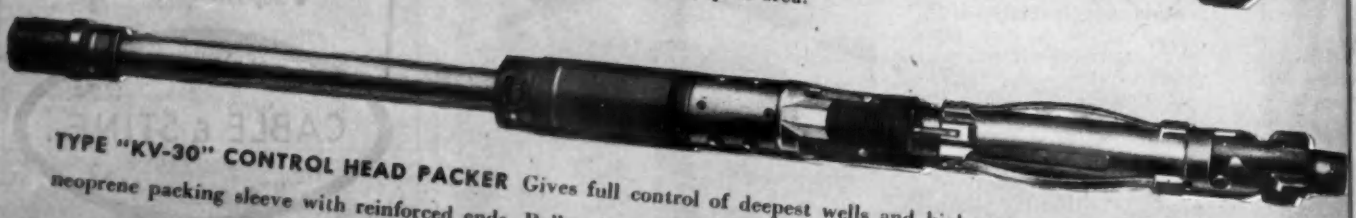


TYPE "K" SWAB Exclusive Guiberson flexible type cups prevent wear and pull more fluid. Swabs fall faster. Pulls full load at every stroke. Cups are easy and quick to change.

TYPE "E" TUBING CATCHER

Ready for instant action. Positive catch stops parted tubing within 3". Will not wedge in casing. Gives largest fluid and gas by-pass area.





TYPE "KV-30" CONTROL HEAD PACKER Gives full control of deepest wells and highest pressures. Has extra long, thick neoprene packing sleeve with reinforced ends. Pulls without swabbing effect.

Crude Production and Refinery Runs Decline and Stocks Decrease Sharply

Decline of crude production and refinery runs in the week ended April 21 unfavorably affected current supply of principal products and there were heavy drafts on stocks of gasoline and residual fuel oil, while distillate fuel oil went to storage only in normal volume for the season.

United States crude production of 4,798,000 barrels daily was down 13,000 from the previous week although 371,000 a day or 8.4 percent above output of 4,427,000 daily in the comparable week last year. Crude runs to stills averaged 4,676,000 barrels daily, down 94,000 from the week before but 233,000 a day or 5.2 percent above runs in the like week a year ago. Crude stocks totaled 221,024,000 barrels on April 24, having increased in that week at the rate of 23,000 barrels daily, but the new total was 13,000,000 barrels or 5½ percent less than the 234,188,000 barrels held April 22 last year.

Production of gasoline averaged 2,097,000 barrels per day, having been increased 58,000 a day over the week before and being 149,000 a day or 7.6 percent above output in the corresponding week a year ago. Stocks of finished and unfinished gasoline were reduced 329,000 barrels daily, to 95,104,000 barrels, which was about 7,000,000 barrels or 8 percent more than the 88,142,000 barrels held a year previously. Stocks of both civilian and military grades of gasoline were reduced materially. Civilian grade stocks declined to 51,617,000 barrels from 52,485,000 a week earlier, and were only slightly higher than a year previously when the total was 51,334,000. Stocks of military and other grades came down to 43,487,000 barrels from 44,925,000 within the week and compared with 36,808,000 a year before.

Residual fuel oil production averaged 1,329,000 barrels daily in the week of April 21, up 24,000 from the week before and 97,000 a day or 8 percent above output in the like week last year. Stocks were heavily reduced by 149,000 barrels daily, having diminished to 40,492,000 barrels. That amount was 11,000,000 barrels or 21 percent less than the 51,599,000 barrels held April 22 last year.

Distillate fuel oil production averaged 654,000 barrels daily, down 61,000 from the week before although 2000 a day or ½ of 1 percent more than in the corresponding week last year. Stocks were increased by 48,000 barrels daily, having risen to 28,219,000 barrels. That total was, however, about 2,000,000 barrels or 6 percent less than the 30,156,000 barrels held a year previously.

Natural Gasoline Output Again Gains in February

Production of natural gasoline and allied products again increased in February, reaching a daily average of 13,130,000 gallons against 13,011,000 gallons in January, the Bureau of Mines has announced.

The month's production, the bureau reported, included 161,409,000 gallons of natural gasoline, against 177,932,000 gallons in January; 26,690,000 gallons of natural gasoline mixture against 28,015,000 gallons; 35,632,000 gallons of raw condensate, against 42,513,000 gallons; 25,424,000 gallons of commercial butane-propane mixture, against 31,135,000 gallons; 38,205,000 gallons of normal butane, against 39,464,000 gallons; 22,446,000 gallons of propane, against 21,878,000 gallons; 11,562,000 gallons of other light petroleum gas mixtures, against 11,734,000 gallons; 13,229,000 gallons of isobutane, against 15,868,000 gallons; 12,053,000 gallons of iso-pentane, against 13,237,000 gallons; 17,824,000 gallons of finished gasoline and naphtha, against 18,552,000 gallons, and 3,158,000 gallons of other products, against 3,014,000 gallons.

Spain Building Tankers

The Spanish government announces that seven medium size ocean-going tankers are under construction. The ships are destined for the importation of crude oil and products into Spain from the Caribbean area, and are to be in service before October.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod.		Runs to Stills		Crude Stocks		Gasoline Stocks		Gasoil and Distillate Stocks		Residual Fuel Oil Stocks	
	Barrels Daily	Week Ended	Barrels Daily	Week Ended	Barrels	Week Ended	Barrels	Week Ended	Barrels	Week Ended	Barrels	Week Ended
Highs:												
1941	4,337	11-22	4,120	10-18	266,187	3-29	99,727	3-29	[1]54,983	11-15	102,448	1- 4
1942	4,337	2- 7	3,961	1- 3	263,208	3-28	[1]109,281	3-14	47,861	11-14	95,857	1- 3
1943	4,436	11-13	4,331	12- 4	245,752	5-29	94,159	3-20	47,187	11-27	72,881	1- 2
1944	4,762	9-30	4,798	12-30	240,992	1- 1	89,162	4- 1	48,863	10-28	64,744	10- 7
1945	[1]4,811	4-14	[1]4,803	2-24	223,782	4- 7	99,012	3-24	38,298	1- 6	56,074	1- 6
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-12	71,152	10- 7	20,722	4-15	105,397	4- 8
1941	3,364	1-11	3,490	1-18	240,399	11-15	79,923	10- 4	28,382	4-12	90,914	7-12
1942	3,297	7- 4	3,393	5-23	231.896	12-12	75.934	12- 5	29,240	4-25	72,962	12-26
1943	3,821	1- 9	3,579	3-13	232,191	1- 9	68,182	10-16	30,732	4- 3	57,596	12-25
1944	4,357	1- 1	4,228	2-12	220,258	9- 9	76,302	1- 1	30,232	4-19	49,737	3-18
1945	4,678	1- 6	4,656	1- 6	[4]218,675	3- 3	86,616	1- 6	26,483	3-17	40,492	4-21

TRENDS OF 1944 AND 1945

Trends in Week Ended:	Crude Oil			Gasoline		Gasoil and Distillate		Residual Fuel	
	Production Daily	Runs to Stills Daily	Stocks Week End	Production Weekly	Stocks Week End	Production Weekly	Stocks Week End	Production Weekly	Stocks Week End
1944:									
January 1	4,357	4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,330
January 29	4,409	4,359	240,251	13,427	81,075	4,054	37,266	8,889	52,857
February 26	4,423	4,377	237,137	13,183	85,248	4,558	33,766	8,952	51,387
March 25	4,385	4,443	236,285	13,362	87,287	4,979	31,319	9,013	51,669
April 1	4,383	4,435	234,667	13,824	89,162	4,450	30,530	8,367	51,326
April 29	4,431	4,300	235,342	13,126	88,342	4,284	30,236	8,398	49,985
May 27	4,514	4,532	234,423	13,502	86,468	4,702	32,035	8,568	49,812
July 1	4,587	4,638	228,860	14,052	83,559	4,496	35,360	8,872	52,235
July 29	4,608	4,627	225,112	14,115	82,665	4,833	38,135	8,900	56,280
August 26	4,667	4,698	222,931	14,112	80,740	4,566	41,453	8,680	59,839
September 30	4,762	4,775	222,393	14,494	78,028	4,622	45,329	9,292	64,226
October 28	4,740	4,658	223,235	14,117	79,058	4,772	48,705	8,985	64,382
December 2	4,712	4,693	221,591	14,853	80,427	4,082	45,832	8,981	61,727
December 9	4,704	4,552	220,258	14,611	80,880	4,056	44,436	8,923	60,458
December 16	4,695	4,537	222,075	14,145	82,747	4,353	42,413	8,727	59,280
December 23	4,729	4,682	222,575	14,635	83,355	4,605	40,846	8,798	58,509
December 30	4,705	4,798	222,998	15,342	86,614	4,257	39,495	9,156	57,430
1945:									
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,651	9,252	51,119
February 24	4,777	[1]4,803	219,351	15,500	95,972	4,958	28,753	9,084	46,713
March 31	4,781	4,677	223,782	14,644	98,758	4,548	26,889	9,184	41,745
April 7	4,783	4,686	220,871	14,244	98,015	4,493	27,037	9,359	41,320
April 14	[1]4,811	4,770	221,024	14,270	97,410	5,006	27,886	9,137	41,538
April 21, 1945	**4,798**	**4,676**	.....	**14,677**	**95,104**	**4,576**	**28,219**	**9,303**	**40,492**
April 22, 1944	4,427	4,443	[5]234,188	13,636	88,142	4,560	30,156	8,622	51,599
Change:									
In week	—13	—94	+153	+407	—2,306	—430	+333	+166	—1,046
In year	+371	+233	—13,164	+1,041	+6,962	+16	—1,937	+681	—11,107
In year	+8.4	+5.2%	—5.6%	+7.6%	+7.9%	+0.4%	—6.4%	+7.9%	—21.5%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922 due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, April 15, 1944.

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FPC Shows Keen Interest In Postwar Plans for United's Proposed Line

Sharp questioning of United Gas Pipe Line Company officials regarding the postwar aspects of their application for construction of a 142-mile, 24-inch pipe line from Carthage field, Texas, to Ouachita Parish, Louisiana, marked hearings last week before the Federal Power Commission.

The line, offered as an emergency measure to supply 100,000,000 cubic feet of gas daily to the Tennessee Gas and Transmission Company and 70,000,000 cubic feet to customers of United now served from the Monroe field, was disclosed by R. H. Hargrove, vice president and general manager, to have a potential capacity of 395,000,000 feet daily under maximum pressure.

Looking Forward

There were indications that the company was looking to postwar expansion in submitting its project, Harry Littman, FPC assistant general counsel, pointing out that there had been no evidence of the need of United customers for the gas or the exact amounts to be taken by them. He demanded that the officials of customer companies be brought in to explain their situation. Littman also asserted that United is closely linked up in a series of agreements with various companies using Monroe field gas which, to considerable extent, prevented the use of gas from the Carthage field if any one of the companies is prepared to furnish Monroe gas.

Hargrove told the commission that WPB has issued an AA-1 priority for the materials which will be needed and an application is now pending before PAW. He disclosed that the company originally contemplated a 26-inch line, but found it would have difficulty in getting valves and would be slowed up in getting pipe of that size. He took the position that the most economic thing to do, if a line had to be built, was to put in one of maximum size.

But commission officials are expected to question the need of an emergency line capable of carrying more than double the volume of gas now required, and to take the position that the more expensive the line built under war conditions the more money will be needed after the war for a return on the capital invested, which will have a direct bearing upon rates.

The commission is responsible for seeing that rates are "reasonable" but the courts in the past have approached the problem from the standpoint of a reasonable return on investment.

The United line is a substitute for a 20-inch carrier originally proposed by Tennessee but dropped under an agreement with United. It will tie in with the Tennessee line to give additional service to the Appalachian area, on which hearings were recently concluded.

In outlinig its case, the company said it would show that there is a deficiency of gas in the Monroe area, that it has reserves available in the Carthage field and transmission facilities sufficient to bring it into the Monroe area and serve both its own customers and Tennessee, and that it has the proper finances.

Opposed By Railroads

Neither the commission nor any of the state regulatory bodies announced any opposition to the project, but Davis Heath of the Texas Railroad Commission was sitting in as an observer.

The only opposition emanated from the Association of American Railroads, which declared that the rapid depletion of Monroe field is "significant," pointing out that when it was first opened to commercial use in 1927 it was thought to be the largest natural gas field in the world.

110-Mile Gas Line From Goleta Field Completed

Southern California Gas Company, Southern Counties Gas Company, and Pacific Lighting Corporation have completed 110 miles of gas line from the Goleta gas field in Santa Barbara County to Los Angeles.

The line was constructed at a cost of $4,100,000 and will insure an adequate supply of gas for the Los Angeles area during the winter. During the summer when the demand for gas drops, surplus gas from fields nearby is purchased and stored in a reservoir at Goleta.

Sohio Laying Seven-Mile Line From Arcadia Pool

Sohio Petroleum Company has started laying seven miles of 3-inch oil line from the Arcadia pool of Oklahoma County, Oklahoma, to move production from the field which was opened about a year ago.

25-Mile, 10-Inch Line in Kentucky Is Planned

An application has been filed with the Federal Power Commission by the Kentucky Natural Gas Corporation for authority to construct a 25-mile, 10-inch pipe line from its distribution system near Russellville, Kentucky, to Greenbrier, Tennessee, where it will connect with the transmission system of the Tennessee Gas and Transmission Company.

The company asserted that it has made application to the War Production Board to allocate to its system 6,000,000 cubic feet of gas per day from the Tennessee line during the coming winter, explaining that unless some arrangement can be made for an additional supply of gas before that time it will be necessary for it to curtail deliveries to municipal distribution systems which are dependent upon it.

The cost of the line is estimated at $280,980.

11-Mile Line Completed From West Texas Field

Cardinal Oil Company has completed an 11-mile, 6-inch natural gas line from the MacDer field, Pecos County sector of West Texas, to the West Texas Utilities Company's electric power generating plant near Girvin, Texas.

The line supplements the company's deliveries of gas from the White & Baker and Walker shallow fields, and was constructed by McVean & Roberts, Odessa, Texas, contractors.

12-Mile Line Completed In Midway Field, Arkansas

Lion Oil Refining Company has placed in operation a 12-mile, 6-inch pipe line outlet for the Midway field, Lafayette County, Arkansas, that connects with the Interstate Pipe Line Company's trunk line near the Buckner field. The latter will transport the oil on a common carrier basis to the Magnolia field, where the oil will enter the Lion Oil Refining Company's system on consignment to the Root Petroleum Company's refinery at El Dorado. Between 5000 and 5500 barrels of the field's production will be routed to the El Dorado plant, while 1200 to 2000 barrels daily will continue to move by tank cars to the Standard Oil Company of Ohio's middlewestern plants.

Gulf Completes Survey For East Texas Pipe Line

Gulf Refining Company's pipe line division has completed a survey for the construction of an 8-mile, 4-inch pipe line from the Pickton field, Hopkins County sector of East Texas to its Mid-Continent-Port Arthur multi-unit system near Winnsboro.

The field has five wells prorated to 160 barrels daily each and an equal number of tests underway.

Water Flood Project for West Side of West Edmond

A group of operators in the West Edmond pool of Central Oklahoma have been given permission by the State Corporation Commission to prosecute a water flood project on the west side of the pool in order to counteract declining bottom hole pressure. The order authorizes operators to inject salt water in a dry hole located in 12-13n-5w, Canadian County, and to flood the Bois D'Arc section of the Hunton lime and to use analine dye so as to mark the progress of the operation.

Sinclair Prairie Oil Company has been selected as operators of the project.

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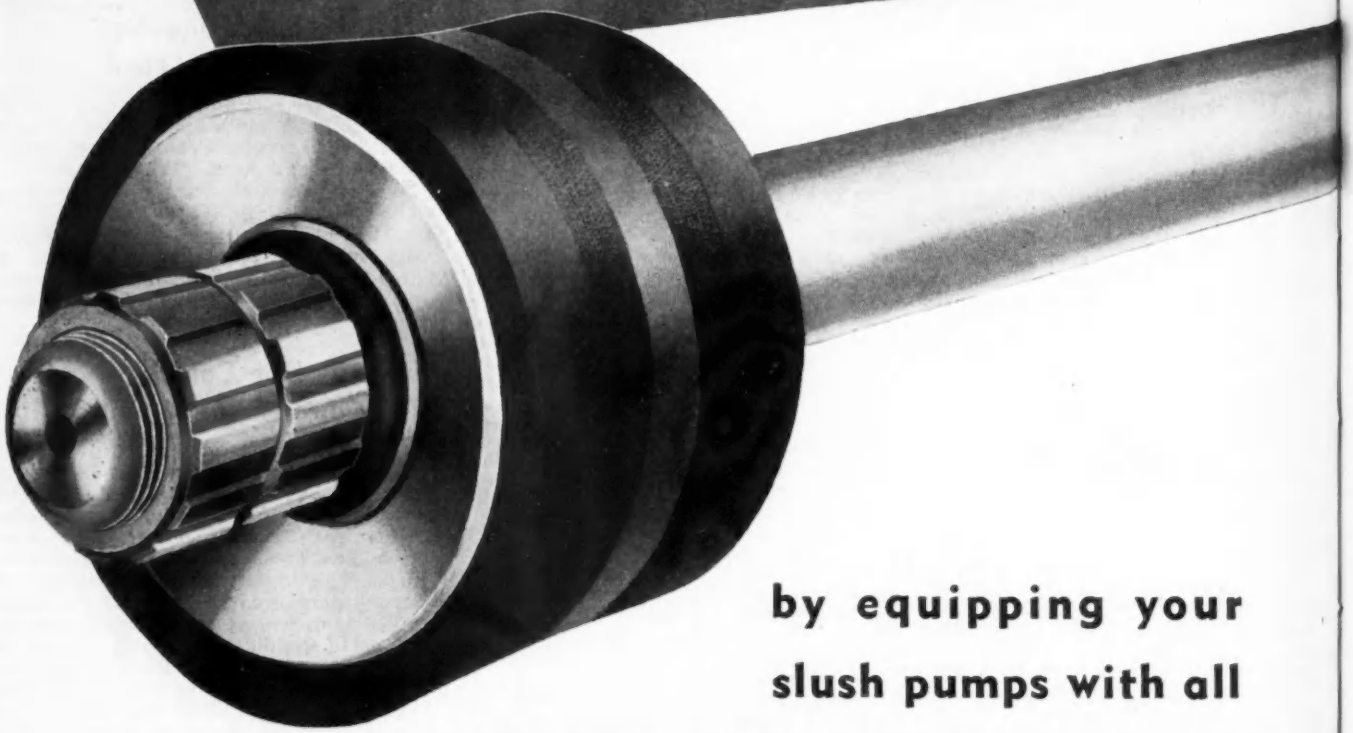

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Socony-Vacuum Receives Report on War Damage to Property in Europe

The annual report of Socony-Vacuum Oil Company for 1944 includes a statement to stockholders regarding the status of the company's properties and installations in the theaters of war and elsewhere abroad.

The report states that "The compounding plant and warehouse in England, once destroyed by bombing has been repaired and has been in full operation for many months. The refinery at Naples is in a state of complete destruction; and of the two refineries in France, one is 60 percent destroyed and the other damaged. No information is yet available regarding the company's refineries in Germany, Austria, Czechoslovakia, Hungary or Poland. Our producing properties in Poland are in the area occupied by the Russians, and as yet we have no information about them, except that some equipment such as bulk storage plants, marketing installations and transportation facilities probably have been lost.

"In Turkey, the Near East, North and West Africa, Portugal and Great Britain, we are in full operation; but in continental Europe the reestablishment of our business, country by country, will depend upon the nature of the peace terms, the economic and financial policies of the United Nations and of local governments, and the measure of support given by our own government to American foreign trade. If conditions are favorable we shall be prepared to restore and expand our foreign operations promptly in the world market.

"Standard-Vacuum Oil Company, which operates throughout the Far East, and in which Socony-Vacuum has a half interest, is not paying its net income in dividends to the parent companies, but is retaining it to finance rehabilitation of properties when that becomes possible."

All Venezuela's Wildcats Of 1944 Abandoned

All eight of the wildcat wells completed in Venezuela during 1944 were abandoned as dry holes.

Mene Grande Oil Company drilled 1; Texas Company subsidiaries put down 3; Socony-Vacuum Oil Company had 1; Creole Petroleum Company 2; and Shell interests temporarily abandoned 1 test. At the end of the year there were three wildcat operations in progress, one of which (Shell DM-2 Mara) was completed as an excellent producer in March of this year. The remaining two have not yet been completed. They are Shell's BA-1 east of the Lagunillas field, and Socony-Vacuum's San Vicente 1, in the Apure basin of Barinas.

Sinclair Negotiating for Concession in Venezuela

Sinclair Oil Company and the affiliated Compania Consolidata de Petroleo report satisfactory progress in negotiating for grants covering 1,926,000 acres in eastern and southwestern Venezuela. The two companies are expected within a few weeks to gain control of an almost solid block of approximately 275,000 acres of new concession properties in northwestern Maturin Monagas along a 55-mile trend parallel to and to the south of the Santa Barbara-Mulata-Jusepin producing area.

Wildcat Being Drilled in Venezuela La Ceiba Area

Mene Grande Oil Company is drilling a wildcat in the center of the company's La Ceiba tract, 17 miles northeast of the Santa Rosa field in northern Anzoategui, Venezuela.

The well is less than 2 miles south of the Creole-Mene Grande pipe line connecting the Maturin Monagas fields and Puerto La Cruz, and is approximately at the midway point of the line. Spudded in February, drilling had progressed to below 1400 feet at the end of March.

Development Proceeds in Guarico Mercedes Field

S. A. P. Las Mercedes (The Texas Company) is proceeding with its program of slow development of the Mercedes field in north central Guarico, Venezuela, drilling double step-out location to prove up producing acreage. There are now eight shutin wells in the field, mostly shallow completions less than 5000 feet in depth, and one dry hole. Well No. 10 was nearing completion stage April 16, drilling and coring at 4350 feet.

Santa Barbara Field Gets Extension Development

While recent drilling activity by Compania Consolidada de Petroleo (Sinclair) has been confined to the drilling of proved acreage as far as the Santa Barbara field proper is concerned, this Venezeula field has been extended considerably to the westward by Mene Grande Oil Company operations in the adjoining Travieso 3 concession. Mene Grande now has 27 producing wells on this piece of property and is proceeding without interruption in its development program.

This Mene Grande campaign is apparently aimed at proving up producing acreage to the southward as well, since the company now has a producing well in the northeastern corner of its Travieso N. R. tract and has another drilling operation in progress there. Mene Grande probably will waste no time in seeking returns on its $1000 per acre bonus investment in the Travieso 3 National Reserve Tract.

Drilling operations will be followed with no less interest by the Creole and Sinclair interests, since the edge of production along the Santa Barbara-Mulata-Jusepin producing trend has not been established on the south. Widening of the producing area in the Travieso 3 locality would practically confirm the producing potentialities of Consolidada's Santa Barbara holdings south of the Amana River. The latter company has not yet put down any wells south of this stream. Likewise, there is considerable uncondemned acreage along the south part of the Mulata tract north of the river (Creole-Pantepec).

Colombia's Production Still Below 1944 Level

Petroleum production in Colombia during February was 1,503,698 barrels, up 134,000 barrels from the 1944-45 low of 1,269,516 barrels produced in January, but considerably below the 1944 average of approximately 2,000,000 barrels per month.

It is estimated that the current potential of the country, based on efficient operation of all producing wells, is more than 2,500,000 barrels per month, due to continued development of the new fields in the Barco and Casabe concessions, but production is necessarily being curtailed because of wartime withdrawal of tankers normally serving the seaport pipe line terminals at Cartagena and Covenas. In addition, the Colombian domestic demand for refined products has shown a progressive decline in recent months, resulting in sharp reduction of throughput at the Barranca Bermeja plant of Tropical Oil Company.

Turkey Orders Equipment For Wildcatting Program

The Institute for Mineral Research, a Turkish government agency, has ordered for early delivery oil well drilling equipment valued at $1,600,000, to be supplied by United States firms. The equipment will be used in test drilling operations in two areas where conditions are regarded as favorable for commercial oil production from rocks of Palezoic age.

Several holes will be put down in the region south of Ankara, but principal attention will be devoted to the area west and southwest of Lake Van, in extreme eastern Turkey.

Rincon 4 Spudded

Texas Petroleum Company, which recently completed its third producing well in the Rincon concession, district of Aragua, Anzoategui, Venezuela, spudded Rincon 4 on March 31, presumably for another deep test. Rincon 3, completed as a producer March 12, was drilled to 9244 feet, but plugged back to 7866 feet.

☆ Oklahoma

West Edmond Pool Given Mile North Extension

West Edmond pool extended a mile north as outpost well flows from the Bois D'Arc section; discovery in Lower Pennsylvanian zone at West Marlow flows 300 barrels of high-gravity oil in 16 hours; New Garber area in Garfield County gets second producer with prospects that Layton sand may add a new zone to the field; southwest extension looms for Big Bend pool in Osage County.

West Edmond: Flowing 10 barrels of oil in 8 hours from the Bois D'Arc section of the Hunton lime, Anderson-Prichard Oil Corporation's Stewart 1, C NW NW 24-15n-5w, extended the 4-county pool a mile north in Kingfisher County and proved a number of new locations between it and Phillips Petroleum Company's Libycate 1, ½ mile south. The well quit flowing when reopened after it was shut in and operators were preparing to acidize the section from 7014-26 feet.

The Oklahoma Corporation Commission has issued its first order permitting the injection of salt water in the Hunton lime zone for maintaining pressures which are declining at the rate of a pound a day. The water injection well is located in 12-13n-4w, Canadian County, and aniline dye will be used in the water to mark the progress of the experiment.

Stephens County: The Texas Company's new discovery in the Lower Pennsylvanian zone at the West Marlow pool, Sears 1, SW NE NE 20-2n-8w, flowed 300 barrels of 46-gravity oil in 16 hours through ¼-inch choke. It was swabbed in at 6714-62 feet and kicked off to flow 85 barrels of oil in 3 hours through various-sized chokes. The strike adds substantially to the reserves and is considered one of the most important of the year.

Garfield County: Cities Service Oil Company completed a second well in the New Garber pool which was opened early this year. Ford 1, NW SE SW 31-23n-3w, flowed 21 barrels of oil an hour through tubing choke from Arbuckle lime at 5292-96 feet. Operators plan to perforate opposite the Wilcox sand at 5083-5149 feet which showed for 8½ million cubic feet of gas on drill-stem test and probably will final the well as a dual completion.

Adding interest to the New Garber area is the possibility of production from the Layton sand which will be a new horizon for the pool. Cities Service's Wilkinson 1, NW NW NE 6-22n-3w, which offsets the Arbuckle discovery well to the east, cut a fault and picked up saturated Layton sand at 4240-70 feet. On drill-stem test operators recovered 600 feet of oil and gas-cut mud. The Ohio Oil Company was preparing to test the Layton at Hebert 1, SEC 1-22n-4w, which failed in the Wilcox. The area seems to have a complex series of faults and will take considerable drilling to evaluate its possibilities.

Osage County: A southwest extension for the Big Bend area of Western Osage County loomed at Phillips Petroleum Company et al's Osage 1, NE NE NW 29-25n-3e, which topped saturated Layton sand at 2867 feet. Electrolog showed good production possibilities and casing was set at 2868 feet, total depth. A. G. Oliphant and C. B. Peters, who discovered the Big Bend pool, were drilling below 1800 feet at Osage 5, SW SE SE 20-25n-3e. Mid-Continent Pipe Line Company is laying an extension line to the Phillips well.

Alfalfa County: Northeast of McWillie in the Anadarko Basin region Ace Gutowsky abandoned Young 1-A, C NW NW 14-24n-11w, which appeared for a time on the verge of opening new production in the Oswego lime and Layton sand sections. Operator recovered about 20 barrels of oil daily and about 10 barrels of water from the lime zone at 5850-5900 feet and later unsuccessfully tested the Layton sand up the hole.

Hughes County: Deep Rock Oil Corporation's Myers 2, SE NE NE 7-7n-10e, in the Horns Corner area, looms as a good producer from the Upper and Lower Cromwell sands following a drill-stem test in the Lower Cromwell, topped at 3571 feet and bottomed at 3577 feet. With tool opened 50 minutes it showed 150 feet of oil and an estimated million cubic feet of gas.

Missouri

Atchison County: Dan Short has staked Rankin 1, SE SE SE 9-65n-40w, a wildcat about 2 miles northwest of the Tarkio pool and a mile from a dry hole which was drilled last year and in which was logged a good oil show. Monebia Drilling Company has the contract.

Platte County: Northeast of Parkville, Fell and Reid's Klam 1, C SE SE SE 19-51n-33w, was waiting on orders at 1502 feet after topping Mississippi lime at 957 feet and setting 8-inch pipe at 965 feet.

New Madrid County: U. S. Bureau of Mines deep test, Oliver 1, C SW SW 29-22n-11e, was attempting to reestablish returns at 3090 feet after reporting exceptionally hard digging just above that horizon.

Stoddard County: M. H. Marr et al's Barnett 1, C SW SW 3-25n-11e, was shut down at 4580 feet after penetrating 8 feet into the Cambrian quartzite. Rotary tools are being dismantled and the hole may be carried down with cable machine.

Wells Completed in the United States in Week Ended April 28, 1945

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS This Week	Last Week	Cumulative This Year	Cumulative Last Year
Alabama													6	6
Arizona														3
Arkansas	2			1	3						3		41	68
California	36	1			37				6	6	43	31	641	636
Colorado												2	13	8
Florida													4	
Georgia												1	2	1
Illinois	10			9	19	2			3	3	24	33	511	521
Indiana	2			2	4				1	1	5	4	94	95
Iowa													1	2
Kansas	9	1		10	20	1	1		5	6	27	38	468	584
Kentucky	2			3	5				1	1	6	2	138	223
Louisiana	9			4	13				3	3	16	22	301	211
North Louisiana									2	2	2	7	96	64
South Louisiana	9			4	13				1	1	14	15	205	147
Michigan	8	1		6	15						15	12	231	185
Mississippi	1			1	2				2	2	4	11	117	34
Missouri													11	6
Montana	5	1			6						6	3	62	85
Nebraska													2	7
New Mexico	5	1		1	7						7	10	162	135
New York	15		10		25						25	25	292	392
Ohio	1	2		2	5						5	6	195	268
Oklahoma	23	2		11	36		1		5	6	42	34	730	495
Pennsylvania	27	3	15	1	46						46	45	847	900
Tennessee														5
Texas	85	20	1	27	133	2	4	1	32	37	172	130	2,318	1,792
E.Tex.Bor. Co.'s	1	5			6						6		26	4
E. Texas Field														3
Rest of E. Texas	2				2				3	3	5	1	64	95
North Texas	17			11	28		1		7	8	36	35	502	414
W. Central Tex.	5			3	8				2	2	10	11	155	127
West Texas	25			8	33	1	1		12	13	47	25	607	491
Tex. Panhandle	6	8			14	1					15	10	207	67
G. Coast, Upper	5	3		4	12		1	1	1	3	15	16	231	161
G. Coast, Lower	14	4			18				4	4	22	20	331	280
Southwest Texas	10			1	11		1		2	3	14	12	168	121
S. Central Tex.			1		1				1	1	2		27	29
West Virginia	1	9		3	13						13	14	240	306
Wyoming				2	2				1	1	3	14	63	52
Total U. S.	241	41	26	83	391	5	6	1	59	66	462	437	7,490	7,020

* Includes distillate wells. † Includes salt water disposal wells.

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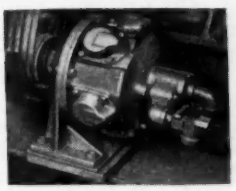

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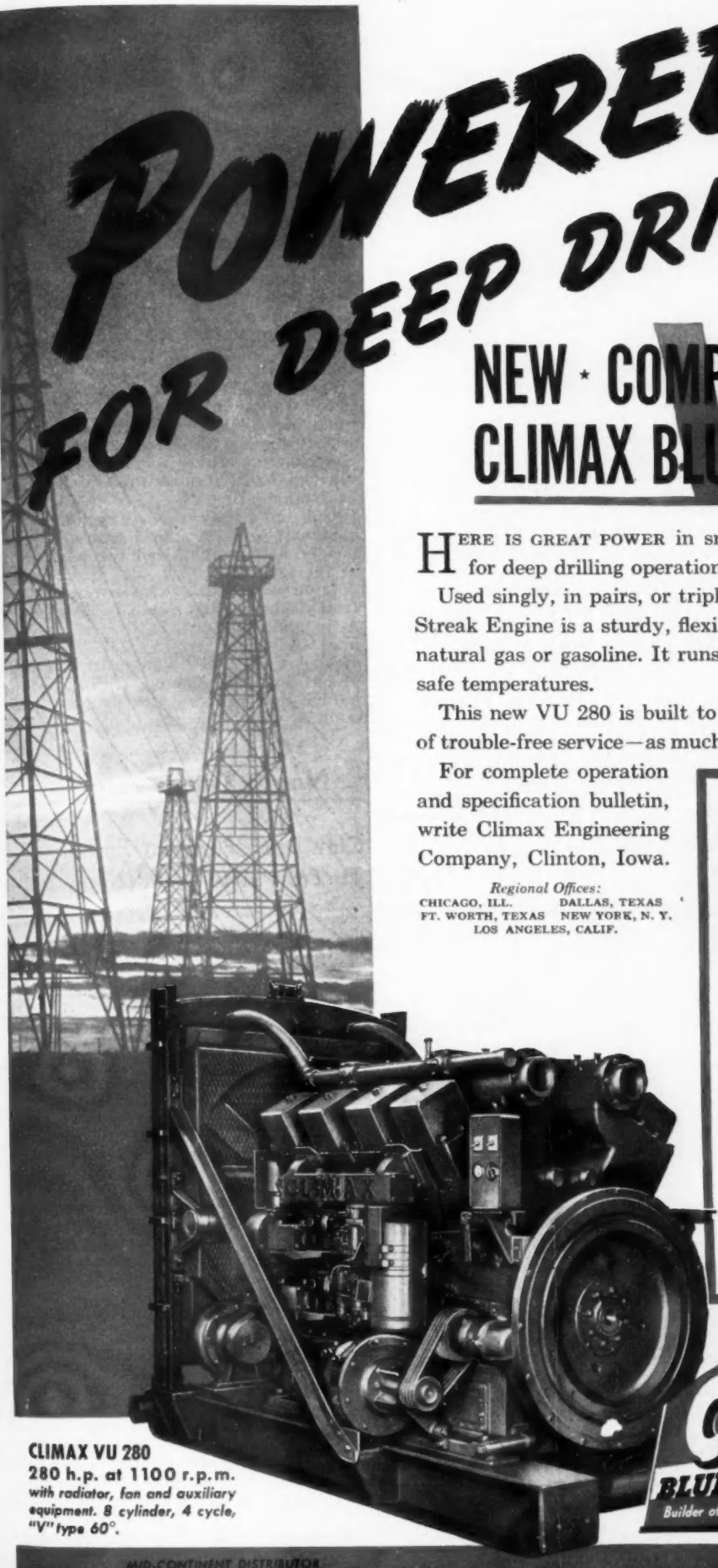

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☆ Kansas

Boyd Pool, Barton County, Northern Extension Seen

Northern extension looms for Boyd pool along southwest flank of Upper Kansas Uplift; Pawnee Rock area again in limelight as Solar Oil Company completes well in Arbuckle zone; Lion Oil Refining Company extends Marjorie gas pool a mile west; new oil pool opened in Barber County.

Barton County: Solar Oil Company's Behrens 1, C N½ SW NE 6-20s-15w, gave the Behrens pool a ½ mile eastern extension after completion as a pumper for 250 barrels of clean oil daily from the Arbuckle lime at 3659-3755 feet. The strike is in the Pawnee Rock area where several important discoveries have been made this year.

In the same county Yellow Cab Oil Company appears to have extended the Boyd pool about 2½ miles north at Kennon 1, SE SE SW 21-17s-14w, which was drilled to 3365 feet. On drill-stem test in the Arbuckle lime between 3355-58 feet, the hole filled with 125 feet of oil in 1 hour and 1300 feet of oil in 24 hours. Operator was acidizing and testing continuously. The well looks good for 100 barrels a day on the pump.

Barber County: About a mile west of the big Marjorie gas area Lion Oil Refining Company has completed Lemon 1-B, SE NW SW 21-30s-13w. Bottomed at 4701 feet, the pipe was perforated in the Mississippi lime zone between 4479-95 feet and flowed an estimated 13 million cubic feet of gas daily. South of the new gasser J. M. Huber Corporation's Clay 1, SE SW 28-30s-13w, produced about 20 barrels of high-gravity oil an hour from the Viola lime between 4583-93 feet, to give the area its first oil production. The well also tested about 15 million cubic feet of gas per day.

Stafford County: Virginia Drilling Company plugged Fischer 1, wildcat a mile east of production in the Mueller pool, in NE SE SE 25-21s-13w, at 3737 feet, total depth. Lansing was topped at 3315 feet, Viola at 3594 feet, Simpson at 3643 feet and the Arbuckle at 3702 feet. The play was on a farmout from British-American Oil Producing Company.

Brown County: R. S. Tomer Production Company is drilling Livengood 1-A, NE SW SW 3-1s-15e, the third test in the new Forrest City Basin area which was opened earlier this year. The pool has 2 producers and Tomer Production is completing Husted 1, NE SW NE 3-1s-15e, which is expected to add another producer to the field.

☆ West Texas

Ector County Receives Big Well In Devonian

Ector County has big well in Devonian, and nearby test is dry in Ellenburger; Hockley County's new pool has 2-mile west extension; Lamb County wildcat passes up shallow show.

Ector County: Amerada Petroleum Corporation's T. P. Land Trust 1, northwest offset to the TXL field discovery, flowed 324 barrels of 39.4-gravity oil with gas-oil ratio of 645-1 through 2-inch choke on 3-hour test after using 500 gallons of mud acid through Devonian perforations at 7895-8042 feet. The Devonian was entered at 7893 feet, being 32 feet low, and the well was flowing into tanks within 3 months and 2 days.

Shell Oil Company's Thomas 1-A, ⅞-mile north of the discovery and an apparent failure in the Devonian, recovered only 60 feet of slightly gas-cut mud when tester was used at 9692-9727 feet. This outpost entered the Devonian 5 feet low, but in topping the Ellenburger at 9695 feet it is 280 feet high.

The Texas Company's T. P. Land Trust 1-B, 1½ miles southwest of TXL field and registering structural position comparable with the Wheeler-Ellenburger field, cemented 5½-inch casing at 9105 feet after drilling to 9339 feet in Silurian, topped at 8725 feet. It will attempt to complete in Basal Silurian, as drill-stem tests at 9245 and 9300 feet indicated possible oil production.

Hockley County: The Texas Company's Coble 1, Labor 20, League 67, Hardeman County School Lands and 2¼ miles west of its recent discovery on the Montgomery prospect, was acidizing after bailing 10 gallons of oil hourly without water from broken pay at 4841-60 feet. Woodley Petroleum Company's Ellwood 1, a mile west by north of the Smyer pool, was temporarily abandoned at 6028 feet after acidizing the Clear Fork, resulting in an abundance of water.

Lamb County: Humble Oil & Refining Company's Bagwell 1, Labor 25, League 673, and 13¾ miles west by north of the Anton pool in broken Clear Fork at 5352-6036 feet, was drilling lime at 4240 feet after testing 90 feet of oil-cut mud at 4090-4120 feet.

Midland County: Humble Oil & Refining Company's Buchanan 1, 9 miles southeast of Midland and prospective producer near the 10,300-foot level, was drilling shale and lime at 11,125 feet towards Ellenburger objective.

Crane County: Gulf Oil Corporation's McKnight 7-E, McKnight sector of the Sand Hills structure, set pipe on bottom at 6126 feet after testing 3100 feet of sulphur water through drill pipe with packer at 6106 feet. A nominal amount of oil- and gas-cut mud was recovered in making 4 drill-stem tests between 5895 and 6106 feet. Top of Ellenburger was tentatively called at 6060 feet, being 463 feet high to McKnight 4, a 6558-foot failure. Gulf's Henderson 1-E, PSL 25, Block B-27, 2⅞ miles northwest of nearest Sand Hills field production, was coring at 6187 feet after testing 90 feet of fluid, averaging 5 percent free oil, and 120 feet of salt water in Simpson at 6160-76 feet.

Upton County: Humble Oil & Refining Company's Gresham 1, a mile west by north of its Parrott prospect, was drilling at 7671 feet after testing 200 feet of gas-cut mud and 140 feet of oil- and gas-cut mud when tester was used at 7431-7639 feet. Parrott 1 was conditioning mud in Devonian chert at 10,743 feet to forestall blowout from upper pay that was temporarily passed up to explore the Ellenburger.

Ward County: Gulf Oil Corporation's Edwards 1-E, 3 miles south by east of the Monahans field, entered the Ellenburger at 10,532 feet, 399 feet low, and was testing at intervals in drilling to 10,663 feet.

Shell Oil Company's Sealy-Smith 6, north outpost for the Monahans field, was drilling at 6220 feet to explore the Ellenburger after passing up flowing production from a new zone at 4940-5036 feet, while drill-stem tests at 5673 feet and 5794 feet yielded oil and salt water.

Winkler County: Stanolind Oil & Gas Company and Shell Oil Company's Waddell 1, ¾ mile northwest of Wheeler-Ellenburger field, was drilling Devonian at 8520 feet. This outpost logged base of Permian at 8010 feet and top of Mississippi at 8120 feet, correlating 142 feet and 132 feet low, respectively, on these markers.

Stanolind-Westbrook Thompson Holding Corporation's Hendrick 35-T-M-88, initial deep test for the Hendrick field, was drilling at 2860 feet on 11,500-foot contract, or water in the Ellenburger. Owners have been assured of $100,500 in dry-hole money.

Gulf Oil Corporation's Keystone 57-E, southeast edge of the Keystone-Ellenburger field, emphasized the possibility of the Devonian being a source of production when a drill-stem test at 7306-75 feet yielded gas at rate of 320,000 feet daily and 450 feet of oil- and gas-cut mud. A second test at 7373-7424 feet yielded a little gas along with 225 feet of oil- and gas-cut mud, with closed in bottom-hole pressure calculated at 3100 pounds.

☆ North Texas

Clay Deep Prospect Fails To Flow After Acidizing

Clay County deep prospect fails to flow after acidizing; Simpson zone to be tested by Grayson County wildcat after exhausting oil show in Ellenburger; Hundley field, Montague County, registers big well.

Clay County: Wayne H. Hammon et al's Bryan's 1, a mile east by south of Dean, swabbed 10 barrels oil hourly on preliminary test of Bend perforations at 5871-91 feet. No appreciable increase in fluid was gained from additional perforations at 5867-98 feet. Acid treatment was underway, and if the well fails to flow it will be deepened.

Continental Oil Company's Thomas 1, 2 miles north of Newport, swabbed 1 barrel of oil hourly on 6-hour test of Simpson lime perforations at 6735-66 feet. The volume of oil decreased after using 2000 gallons of acid. The hole will be plugged back for completion in Strawn oil sand at 4145-53 feet.

Grayson County: The Pure Oil Company's Little 1-A, Gordonville geophysical prospect, was scheduled to perforate opposite promising oil saturation in the Simpson at 9135-70 feet after failing in the Ellenburger at 9479-9919 feet. This wildcat is credited with having filled 4000 feet with oil when cleaned out to bottom, but the oil column exhausted when open hole below 9205 feet was treated with 4000 gallons of caid.

Montague County: Continental Oil Company and Sinclair Prairie Oil Company's Hundley 3-A, D. Martindale Survey, qualified as the largest pro-

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ducer in the Hundley field in flowing 216 barrels of 41-gravity oil natural on 3-hour test through ½-inch choke from Basal Bend perforations at 6251-70 feet. The Bend was topped at 6190 feet.

Cooke County: Sinclair Prairie Oil Company's Thomson 1, north offset to the Sivell Bend field's 6800-foot Strawn discovery, cemented 7-inch casing at 6988 feet with the well bottomed in shale at 7005 feet. Test will be made of a deeper sand lense at 6947-61 feet, while a commercial well is virtualy assured at 6827-54 feet.

Jack County: Panhandle Refining Company's Cherryhomes 1-A, T. Burbridge Survey and a southeast offset to its Basal Bend flowing discovery at 5035-50 feet, was drilling shale and sand at 5480 feet after indicating 2,000,000 cubic feet of gas at 5021-35 feet. The Bend was entered at 4788 feet, or 22 feet high to the discovery.

☆ East Texas

Acid Treatment Slated For Henderson Prospect

Acid treatment due for Henderson County gas-distillate prospect, fifth producer qualifies the Pickton field for a prompt pipe line outlet; Coke field deep test is barren in the Upper Rodessa.

Henderson County: The Texas Company's Morse 1, Chandler prospect and only indicated discovery pending in the district, recovered 1800 feet of gas- and distillate-cut rotary fluid when drill-stem test was made of Travis Peak perforations at 10,346-10,386 feet. The well was scheduled to be treated with 2500 gallons of mud acid.

Hunt County: The Ohio Oil Company's Popper 1, O. M. Roberts survey and on the Cash faulted structure, was drilling hard lime at 9340 feet with formation samples above the level carrying sulphur odor with salty taste. This wildcat is credited with having entered the Buchner near the 8625-foot level and the Smackover at 9015 feet.

Smith County: Sinclair Prairie Oil Company's Shofner 1, Smackover test for the Chapel Hill field, was drilling sand and shale at 9191 feet in Travis Peak topped at 8075 feet.

Wood County: Amerada Petroleum Corporation's Faulk 3, Travis Peak test for the Coke field, was drilling at 7915 feet. The Bacon lime section was cored at 7792-7819 feet without shows, or porosity. The next prospective zone is the Gloyd.

Hopkins County: Humble Oil & Refining Company's Miller 1, Stephens Nichols survey, is the fifth flowing producer for the Pickton field, having an initial flow of 671 barrels of 51-gravity oil with gas-oil ratio of 1608-1 through ¼-inch choke. Production is from perforations in the Bacon lime at 7879-89 feet. All wells are prorated to 160 barrels daily each. A pipe line connection is becoming urgent, as there are 5 additional tests underway.

Robertson County: Hamman Oil & Refining Company's Gibson 1, north offset to its discovery in the Calvert field, pumped 75 barrels of 36-gravity oil initial from basal Navarro sand at 2195-2238 feet. It is equal to the best well in the area, and has an allowable of 60 barrels daily.

Harrison County: A looming discovery is R. J. and D. E. Whelan's Peal 1, Betty Humphrey survey, 2 miles northwest of Harleton. The well made an estimated 20,000,000 cubic feet of gas on a 6-minute drill stem test of the Deese section at 6755-89 feet on a ¼-inch choke top and bottom and flowed after 1½ minutes. Pressure built up to 500 pounds maximum. The level was reported as the second Rodessa zone and the first was said to have carried water. Operators cores once after drilling to 6801 feet and got 4 feet more of slightly porous lime to give the well a 29-foot section. Production possibilities were still being watched as the well cored at 7380 feet.

The discovery is considered of major importance, being the first well drilled in this area since Rodessa production was extended southwest from Cass to the Jefferson district of Marion County.

Arkansas Louisiana Gas Company tested 250,000 cubic feet of gas and spray of straw-colored distillate in F. A. Baker 1, wildcat in the L. G. A. Steele survey, 6½ miles southwest of Waskom townsite. There was no formation water showing. Perforations were said to be from 6082-96 feet in the upper sand of the Travis Peak horizon. Operators perforated in the lower section and were preparing to swab.

Shelby County: Humble Oil & Refining Company's Pickering Lumber 1, wildcat near Huxley in the northeast end of the county in the Francois survey, had a gas blow out at 8689 feet.

☆ South Central Texas

LaSalle County Wildcat Logs Sand With Oil Odor

Quintana wildcat in LaSalle County logs stand with oil odor; Ormsby field discovery well is gauged; deep test staked in Bexar County field.

LaSalle County: Quintana Petroleum Company's South Texas Syndicate 1-F, wildcat test 15 miles south of Fowlerton, is drilling below 5615 feet in shale after logging sand with an oil odor at 5378-80 feet.

Wilson County: L. D. Ormsby's Williamson Heirs 1, discovery well in the Ormbsy field, 9 miles northeast of Floresville, pumped 127 barrels of oil, 10 percent water, from open hole at 5042-62 feet.

Bexar County: H. A. Pagenkopf has staked a 5000-foot test in the Gas Ridge field. It is the Max Blum 1 in the M. F. Rodriguez Survey.

Atascosa County: Gulf Oil Corporation's Adam Tom 1, on the Campbellton prospect, was coring at 10,500 feet. The Austin chalk was based at 10,040 feet with the Edwards lime topped at 10,370 feet.

Drilling Firm Formed

Roy G. Carter, John L. Hill, A. P. Merritt, C. P. Porter and A. Z. Skeeyers, all of Kilgore, Texas, have formed the Big Five Drilling Company with a capital stock of $50,000.

☆ Southwest Texas

Sun Dual Completes Well In Starr County Field

Sun dual completes well in Garcia field; Hiawatha finals Southland field well; wildcat tests staked in McMullen and Webb counties.

Starr County: Sun Oil Company has made dual sand completion in M. M. Garcia 2-D in the Garcia field. Through perforations at 3878-83 feet, the well flowed 78.52 barrels of 44.6-gravity oil daily on ⅛-inch choke. Casing pressure was 600 pounds. In the lower sand at 4106-10 feet, the well gauged 66.90 barrels of 44.6-gravity oil daily through ⅛-inch choke. Tubing pressure was 425 pounds.

Duval County: Hiawatha Oil & Gas Company's Southland Life Insurance Company 33, in the Southland field, has been completed for 66.41 barrels of 41.6-gravity oil daily through a ⅛-inch choke from perforations at 3924-54 feet. Northeast of Well 32, the company spotted its Southland Life Insurance Company 34.

McMullen County: Dee Davenport is preparing to start operations at his Annie Graves Dolph et al 2, wildcat test 14 miles southeast of Tilden.

Webb County: R. F. Schoolfield has staked location for a 2300-foot wildcat test 3½ miles southeast of Bruni. It is the J. C. Martin 1 in the SK&K Survey 139.

Enough Gasoline for Many Generations Is Predicted

Americans for generations to come need not worry about the nation's gasoline supply as there are sufficient sources available to meet all automotive requirements for hundreds of years, according to Dr. Robert E. Wilson, chairman of the board of Standard Oil Company of Indiana.

Dr. Wilson pointed out that if crude oil supplies are exhausted the industry will make just as much gasoline from other raw materials including natural gas, oil shale and coal.

He disclosed that following the collapse of Germany a new super-fuel for planes will go into production and stated that plans have been made to "take the cream" out of 100-octane gasoline now used in military planes and make a super-fuel to give American planes super-performances. The less valuable constituents left over will go into motor gasoline, thus moderately increasing the quality and quantity of this fuel.

Properties Sold

Neville G. Penrose, Inc., substantial producer in the West Texas-New Mexico district with headquarters at Fort Worth, has purchased J. E. Farrell & Company's stripper-well properties in the K-M-A field, North Texas, for $120,000 cash. The deal involves 6 leases on the Bradley and Waggoner Bros. tracts with 41 shallow wells pumping 42 barrels daily, while 23 Strawn wells have an allowable of 149 barrels. The majority of the leases have outstanding interests retained by The Texas Company, Waggoner Bros. and others.

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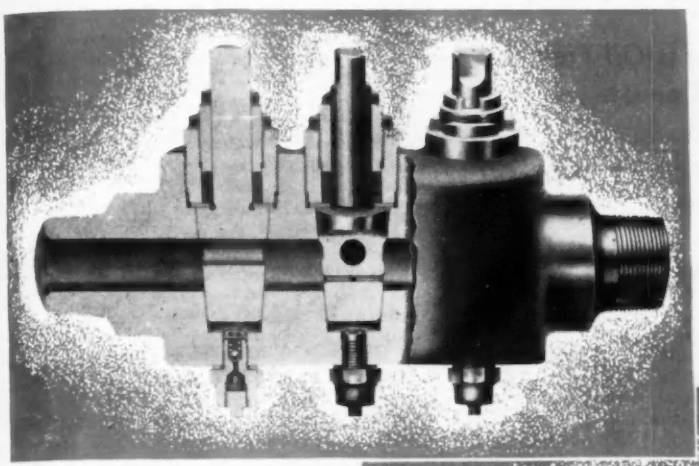

A variation of the 2″ Six Bean Davidson Choke is the new Three Bean Choke. Both types offer a combination valve and choke, tested to 8000 pounds C.W.P. These chokes have a 5/8″ diameter open flow, and the choke sizes may vary from 1/16″ to 1/2″ in multiples of 1/64″. The first flow bean may be a blank **to act as a wing valve,** and the other beans may be furnished each with two sizes of choke to suit a wide variety of conditions.

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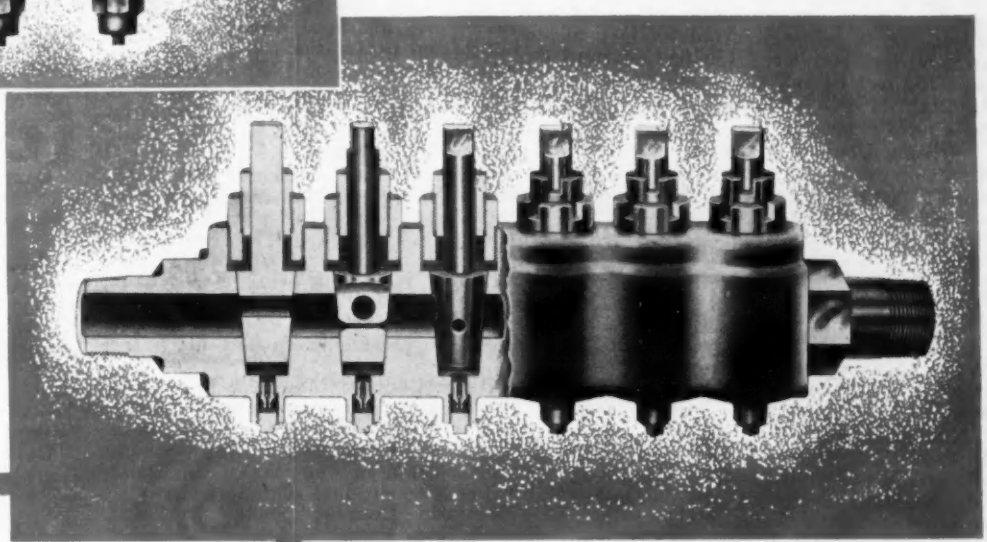

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5. Direction of flow through bean can be reversed by a half turn of the stem

Davidson Variable Chokes are made for rugged service. The body is of cast steel, the flow beans are of hardened steel and the packing is shredded lead. The flow beans are resistant to sand cutting, and are easy to replace. A flow bean can be removed and repacked in a few minutes without breaking out any of the flow line connections.

The Davidson Variable Choke has proved its durability, and is being used with good results on wells having 3000 pounds pressure.

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☆ Lower Texas Coast

Bee County Wildcat Opening Gas and Distillate Field

Navarro wildcat opening new gas and distillate field in Bee County; Willacy County wildcat test drilling deeper; Agua Dulce gas well recompleted as oil producer.

Bee County: Navarro Oil Company's F. A. Dahl 1, Ragan Survey, wildcat test 3½ miles northeast of Pettus, has cored gas and distillate sand in the Wilcox formation to indicate the opening of a new producing area. Sand was cored from 6728-6754 feet. Operator has landed 7-inch casing on bottom and will drill deeper before attempting completion. This well is southwest of the Burnell-Wilcox sand pool.

Ten miles west of Pettus, in the T. B. Barton Survey, Hewit & Dougherty's T. W. Wolfe 1 is coring deeper after failing on a series of drill-stem tests. On a test at 6749-55 feet, the recovery was 10 feet of condensate and 60 feet of salty muddy water, 495 pounds working pressure through a ¼-inch choke in 9 minutes. Another test at 6756-60 feet recovered 150 feet of mud and 150 feet of salt water, no pressure, through ¼-inch choke. Operators will core to 7250 feet.

Willacy County: Magnolia Petroleum Company and J. S. Abercrombie Company's N. H. Dohe 1, wildcat 3 miles southwest of Raymondville, is drilling below 9290 feet in sandy shale. This wildcat test is credited with coring sand showing oil and gas at 8160-80 feet. No tests have been made.

Humble Oil & Refining Company has outlined a new drilling program in the Willamar field. The company has staked locations for 7 new tests on the 8850-acre Sauz Ranch-Mulato Pasture lease.

Nueces County: L. M. Lockhart's C. F. Winfield 3, Agua Dulce field, originally completed as a gas well at 4828-38 feet, has been deepened and completed as an oil well from sand at 5135-39 feet. On a 24-hour gauge, the well flowed 113.97 barrels of 39-gravity oil through a 9/64-inch choke. Tubing pressure was 1500 pounds and casing pressure 1020 pounds.

Kleberg County: Tom Graham of Corpus Christi has staked a wildcat 2 miles southwest of the Ricardo field. It is the H. L. Daughters 1 in Lot 5, Block 46, Kleberg Town & Improvement Company Subdivision.

Karnes County: Magnolia Petroleum Company's Ruth Ingram 1, Burnell-Wilcox field, is being completed in sand at 6774-82 feet. On a production test through the drill stem it flowed 4½ barrels of oil an hour with 840 pounds working pressure. Tubing has been run and the well now is being washed into production.

Oil Companies Assist In Training Army Officers

Oil companies, especially those having installations in the New York port areas, are contributing to the training program of the Army to provide a larger number of qualified officers for gasoline and oil supply work.

Student officers are having the opportunity to observe and participate in almost all phases of petroleum products handling under guidance of experts made available by the oil companies.

Officer personnel in all branches of the Army Service Forces has been screened to obtain a list of those having civilian oil industry background and the list has been classified according to type of experience.

☆ Upper Texas Coast

McCarthy Opens Oil Field For Brazoria County

New oil field opened in Brazoria County; Village Mills outpost fails to encounter shows in first sand; Shell's well near Garwood tests gas and some distillate; Magnolia spots new Woodbine sand wildcat test in Trinity County.

Brazoria County: Glenn H. McCarthy has opened another Upper Texas Coast oil field with the completion of W. W. Smith 1, John Bradley Survey 9 miles northwest of Angleton. The well is credited with flowing 30 barrels of 36-gravity oil an hour through ¼-inch choke from perforations at 8656-61 feet. Tubing pressure was 1250 pounds with the casing sealed. Flowing pressure was 3500 pounds. The well is flowing from the Frio sand and is in the Blue Lake area. Depth is 9700 feet.

Hardin County: Houston Oil Company of Texas and American Republics Corporation's Rice Institute 1, Charles Stewart Survey, 1½ miles northwest of the oil discovery well in the Village Mills field, is drilling below 6000 feet in shale. This well failed to encounter shows in the 5800-foot Cockfield-Yegua sand now producing in the discovery well.

Trinity County: Magnolia Petroleum Company has a new test in the Glendale area. It is the Bolton 2, southwest of Navarro Oil Company's Bolton 1 which tested shows in the Woodbine sand but failed to produce commercially.

Colorado County: Shell Oil Company's Kyle Estate 1, J. Grant Survey, wildcat 4 miles northwest of Garwood, is making a squeeze job after recovering 3,000,000 cubic feet of gas, some distillate and salt water on a drill-stem test through perforations at 8780-8800 feet. Depth is 11,944 feet with 5½-inch casing set at 8850 feet.

Tide Water Associated Oil Company still is testing its Albert 1, T. J. Evans Survey, northeast of the Sublime field discovery well. On a second test of open hole at 9530-40 feet the well flowed 103 barrels of 37-gravity oil in 12 hours with a working pressure of 1975 pounds. The gas-oil ratio was 4941-1.

Chambers County: Sun Oil Company's E. H. Moore Estate 1, Plummer Survey, in the Double Gum area northwest of Winnie, was making a drill-stem test through perforations at 8330-33 feet. A test at 8880-90 feet recovered some oil, wash water, and salt water.

Walker County: Magnolia Petroleum Company's Thompson Brothers-Texas Long Leaf Lumber Company A-1, Woodbine sand wildcat test south of the Kittrell field and 3 miles east of Weldon, bottoms at 9962 feet with 5½-inch casing set at 9960 feet. Operator was drilling plug to go deeper. No tests have been reported but the setting of casing indicates a test will be made soon.

☆ South Louisiana

New and Deeper Sand Is Opened In Venice Field

New and deeper sand opened in Venice field; second well in Iota field prepares to test; Thornwell outpost logs gas and distillate sand.

Plaquemines Parish: Tide Water Associated Oil Company has opened another sand in the Venice field, the deepest yet uncovered in that area. The company's Manhattan Land and Fruit Company 1-C, 23-21s-30e, flowed 10.39 barrels of 35-gravity oil an hour on a 13-hour gauge from perforations at 11,867-898 feet. Tubing pressure was 1250 pounds with the gas-oil ratio 740-1. Total depth is 12,431 feet with 5½-inch casing set at 12,424 feet.

Tide Water's C. L. Johnson 4, at Venice, flowed 7.2 barrels of 30.7-gravity oil an hour through drill stem, using ¼-inch and 9/64-inch choke, from perforations at 8218-20 feet. Five and one-half inch casing is set on bottom at 8405 feet.

Acadia Parish: Union Sulphur Company's Medlenka 2, east offset to the company's discovery well in the Iota field, plugged back from 11,001 feet to test in the discovery sand at 9678-90 feet. The Medlenka 1 was completed through perforations at 9664-76 feet for 85 barrels of 33-gravity oil daily.

Cameron Parish: Cities Service Oil Company's Lacassine 2, 6-21s-4w, ½-miles southeast of the gas discovery well in the Thornwell area, cored sand with a gas and distillate odor at 9632-43 feet and was drilling at 9700 feet in sandy shale. The Thornwell field was opened in March, 1942, with the completion of Cities Service's Lacassine 1 at 9638-44 feet as a gas and distillate well. The 2 Lacassine is the third test for the area, the second test having been dry.

Lafourche Parish: C. I. Production Company's Octave Aucoin, wildcat 2 miles northwest of the Lake Long field, is drilling below 10,100 feet and will run an electrical log at 10,500 feet. Sand showing water was reported at 9685 feet.

Vermilion Parish: The Pure Oil Company's LeBlanc 1, at West Gueydan, completed in March through perforations at 10,788-789 feet, was being killed and operator will test in a higher sand.

Field Named

The oil field nomenclature committee of the South Texas Geological Society has given the name of "Maedgen" to the new oil field opened by H. H. Howell's C. A. Maedgen 1, Delgado grant A-4, San Patricio County.

Seaboard Oil Corporation's Sally Treadwell 1, H. W. Brown Survey, discovery in Karnes County, has been named the "Coy City" field.

Plant Purchased

Gulf Refining Company has acquired the Hercules Gasoline Company, Inc.'s, natural gasoline plant near the Kilgore sector of the East Texas field. The plant has been in service since 1934, and has a rated capacity of 18,000,000 cubic feet of gas daily, manufacturing natural gasoline, butane and propane. It is connected to 2490 wells.

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The technology of drilling mud control has advanced tremendously in the past few years in an effort to overcome new drilling hazards. However, the hazards have increased rapidly as new depth records are attained with the drill bit. Such troublesome problems as heaving shales, chert sections, high pressure zones and porous formations are still causing the companies and contractors much trouble and lost time.

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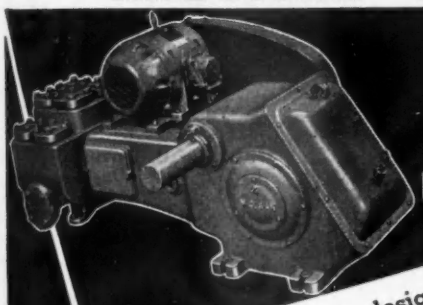

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☆ North Louisiana

Six Completions Noted; Bossier Well Gets Test

Six completions registered, one a wildcat failure; 7 field and 5 wildcat locations made; interest continues to center around extension in Bossier Parish.

Bossier Parish: Vaughn and Hurley's Ellerbe 1, 3-20-13, was squeezed for an additional test in the "D" sand of the Cotton Valley, production zone of the discovery well, Barnsdall's Hanks of this area. Originally the well showed for an extension of the new production area before being taken to 9020 feet. On drill-stem test, following perforations made from 8041-55 feet in the "D" sand, the well flowed overnight at the rate of 500,000 cubic feet of gas per day with some salt water through ¼-inch choke at top and bottom.

Barnsdall Oil Company's Welori Lumber Company 1, south outpost of the company's discovery, was reported nearing pay sand at 7765 feet.

Caddo Parish: W. P. Johnson Drilling Company is to drill the W. P. Stiles Estate B-6, east and south of the northwest corner of the southeast quarter of 21-21-16w. This company completed W. P. Stiles Estate B-5 from perforations between 2272-92 feet with 141 shots as a small pumper at a total depth of 2404 feet.

De Soto Parish: J. P. Owens completed Farmer E-2, which is pumping 50 barrels per day. This parish also gained a wildcat stake for the week with A. J. Bankhead to drill a 3000-foot test at the Porter 1, 23-12-13w.

Claiborne Parish: Big West Drilling Company applied for a permit to dually complete A. N. Alford 1, in 11-21-1. A new Travis Peak operation will be in the North Homer area of the parish with F. A. Callery to drill Sallie E. Williamson 1, 28-22-7w. Grady Vaughn is to be the driller.

M. N. Nobles et al 1 will be drilled by The California Company in 12-19-4w to 10,500 feet.

Caldwell Parish: The Atlantic Refining Company staked a wildcat, the Louisiana Central Lumber Company (tract D) 1, in 14-12-3w. Atlantic's Tremont Lumber Company 1, a wildcat, was found dry and abandoned at 6700 feet.

Shell Oil Company's Louisiana Central 1 recovered salt water on drill-stem test from perforations between 11,558-82.

Sabine Parish: North American Oil Consolidated of Shreveport will drill the Whitney 1, 5-9-12w in the Converse area.

Union Parish: In the Monroe gas field Louisiana Gas Producing Company staked C. C. Bryan 1 to go to the Monroe sand.

☆ Arkansas

Three Routine Completions Recorded During Week

Three routine completions, but no locations composed activities in Arkansas; some operations testing.

Columbia County: Lion Oil Refining Company's Holland 1, C NE NW 18-18s-19w, is flowing 120 barrels of oil through a 6/64-inch choke. Gas-oil ratio is 891-1. Perforations were made between 8288-90 feet with 24 shots. Shutin tubing pressure was 1160 pounds. The well is in the West Atlanta field. In the DorcheatMacedonia field Phillips Petroleum Company's Cloette 1, 18-18s-21w, flowed 40 barrels of distillate and 1,700,000 cubic feet of gas per day after perforations were made between 8936-58 feet. Total depth is 9038 feet.

In the Village field, E. G. Bradham and C. D. Ragsdale's Booth Unit 1, which at one time was temporarily abandoned, was reperforated between 7356-62 feet with 24 shots. It is flowing at the rate of 165 barrels of oil per day through a 9/64-inch choke, and is showing an increase in flow, with tubing pressure 625 pounds and gas-oil ratio 700-1. Total depth is 7396 feet.

Haynes B. Ownby's J. W. Smart B-3, NE NW SE 12-15-20, Stephens-Smart field, was perforated between 3082-88 feet with 12 shots; 3104-08 feet with 12 shots; 3400-04 feet with 24 shots. It tested 87 barrels of oil and 216 barrels of salt water per day. Bridge plug was set at 3200 feet for a test of upper perforations. Operators were preparing to squeeze off and reperforate between 3082-88 feet. Total depth of the well is 4055 feet.

Oklahoma Bill Would Curb Waste of Common Supply

A bill authorizing the Oklahoma State Corporation Commission to regulate the taking of oil or gas from any common source of supply to prevent waste and protect the correlative rights of parties owning interests in such common source of supply, has been introduced in the Oklahoma legislature by Representaitve J. H. Arrington of Stillwater, chairman of the House Oil and Gas Committee.

The bill states that the order of the commission establishing such spacing or drilling units shall set forth the outside boundaries of the surface area included in such order, the size, form and shape of the spacing or drilling units so established, the drilling pattern for the area which shall be uniform, and the location of the permitted well on each spacing or drilling unit. It further prohibits the drilling of any well into any common source of supply after a spacing order has been entered, at a location other than that fixed by the order.

In efforts to meet objections of operators to a proposed secondary-recovery measure introduced by Representative Arrington, the House Oil and Gas Committee approved a revised bill which would require that a field be defined by drilling before a secondary-recovery unit could be established.

Glass Fiber Exhibit

Applications of materials fabricated from glass fibers to meet insulation needs of electrical equipment will be shown at an electrical insulation exhibit to be held in the Sam Houston room of the Rice Hotel, May 1 and 2. Oil field adaptions include application of glass in place of materials affected by petroleum products. And the separation of petroleum products from entrained water through treatment of the filter material so as to be water-repellant.

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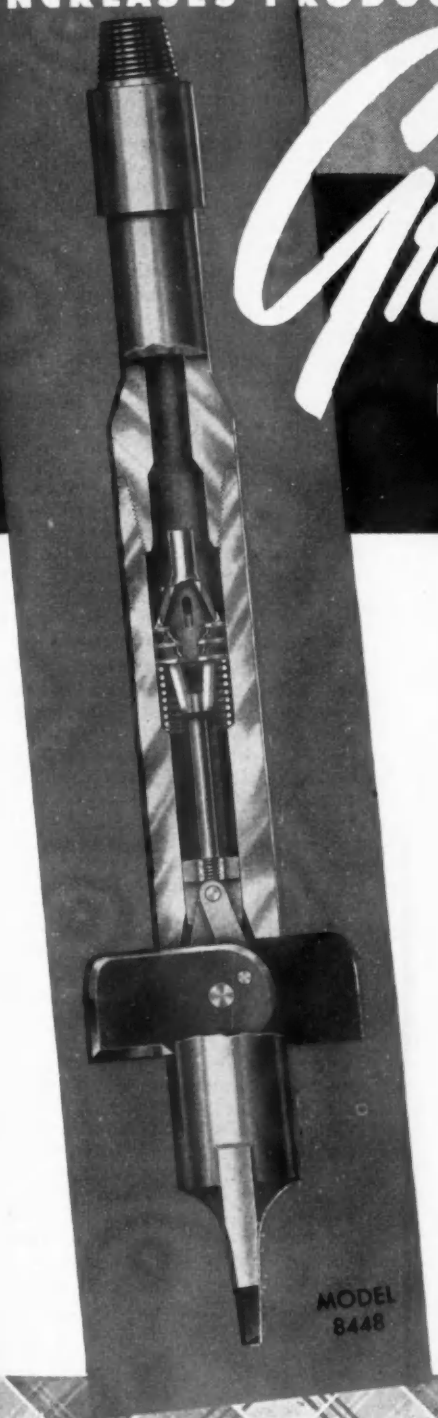

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☆ Mississippi

Activity Getting Started In Marion County Area

Dual completion for Baxterville test; Wayne County test abandoned; new activities underway in Hub field, Marion County.

Lamar County: Gulf Refining Company's J. M. Andrews 1, SEc SW 6-1n-16w, the second test for Gulf in the Baxterville field, has been dually completed, flowing 305 barrels of 15.4-gravity oil per day through ¼-inch choke from perforations opposite the Massive sand at 8756-8794 feet. Tubing pressure is 800 pounds, gas-oil ratio 228/1. Gas production is from the upper Tuscaloosa horizon with a flow rate of 3,085,000 cubic feet of gas and 38.5 barrels of 57-gravity condensate per day. This is the third producer for the field. Gulf's W. E. Davis 1, 7-1n-16w in the Baxterville field, is coring below 7630 feet in grey shale with no shows. Sun Oil Company's Snowden 1, 7-1n-16w, has run casing to 8756 feet in the Massive sands and is preparing to perforate. Cores taken at 8780-86 feet indicated porous sand with shows of black oil. Superior Oil Company's R. Batson 2, NWc SW SE 17-1n-16w, is coring below 8790 feet in shale. Cores taken further up the hole had shows of gas-condensate.

Jeff Davis County: Gulf's Sarah Griffith 1, SWc NE NW 35-9n-19w in the Gwinville field, has cored porous sand with oil stains in the Tuscaloosa zone at 8195 feet. Cores taken opposite the Eutaw horizon indicated slight shows of gas-condensate. Well is coring ahead. Superior Oil Company's Alex Thompson, NWc SW 21-9n-18w, has encountered gas-condensate sand at 8145-8206 feet and has reached 12,620 feet in the Comanche zone.

Jefferson County: Humble Oil & Refining Company's M. R. Smith 1, SEc 12-9n-1e, a Tuscaloosa test, had unsuccessful drill stem test at 6343-57 feet with only water and drilling mud recovered. Gas flow was reported in the Wilcox horizon. Electrical log has been run to 8088 feet and well is drilling below 8425 feet. Gulf's Ella M. Cato 2, NWc NE 30-8n-42, has reached 4522 feet with no shows. Hole is seven degrees off and cement plug has been set between 4270-4426 feet. Tide Water Associated Oil Company's B. F. Buie 1, NWc 12-8n-4e, is drilling below 6515 feet with top of Wilcox at 4080 feet.

Jones County: Gulf's D. J. Flynt 1, C SW NE 35-9n-12w, has been cored continuously through the Eutaw horizon with no shows. Tuscaloosa zone was topped at 7223 feet and well is drilling below 8315 feet. Gulf's W. A. Valentine 1, NWc NE NW 4-9n-13w, is drilling below 7400 feet in red shale.

Jasper County: Gulf's Mrs. L. P. Thornton 7, NWc SW 36-1n-12e in West Heidelberg, tested dry from perforations at 5107-12 feet in the Eutaw zone. Water was perforated at same point and swabbed dry. Gulf's Masonite "A" 4, 26-1n-12e, in West Heidelberg, has drilled to 6112 feet in red shale with no shows. Electrical log has been run and well probably will be abandoned.

Marion County: Activity is starting in the Hub field, site of Humble's gas-

condensate discovery. Humble has made location for its A. E. Ball 1, C NE NW 20-2n-14e, and the California Company is building roads to its W. E. Walker, 10-2n-18w. Gulf's E. H. Bradshaw 4, SWc SE SE 21-3n-17w, 5 miles northeast of Humble's discovery, has been abandoned at 7200 feet in salt.

Wayne County: Gulf Refining Company's Lun Woodard 1, NEc NW SE 6-9n-8w, Eucutta pool prospect, has swabbed an estimated 75 barrels of oil per day and is preparing to pump. Production is being made through 2½-inch tubing from perforations at 5203-13 feet in the Eutaw horizon. Lyons & Prentiss' T. F. Reynolds 2, NEc SE NW 18-9n-8w, has perforated at 5226-42 feet in the Stanley sand and is swabbing.

Alabama

Wayne Refining Company's Willie Mitchell 1, SEc NW NE 12-8n-3w, wildcat in Washington County, is drilling below 2620 feet. Shows of oil have been indicated between 2050-55 feet. J. T. Parks' S. A. Hobson 1, C SW NE 9-8n-2w, was shut down waiting orders at 3185 feet.

Walker County: Glen D. Rose Oil & Gas Company's Ulysees 1, 6-13s-6w, is drilling below 1400 feet in shale and lime.

Bullock County: A new wildcat test was staked as Capital Oil & Gas Company made location for Ethel Gholston 1, 18-14n-22e.

Florida

Two new tests were staked in Florida, 1 wildcat and the other in the Sunniland field of Collier County. The latter is Humble Oil & Refining's Gulf Coast Realties 5, C SW SW 20-48s-30e. Humble's deep test in the field, Gulf Coast Realty Company 4, NEc 20-48s-30e, is drilling below 11,392 feet in dolomite with no shows reported.

Madison County: A new wildcat test is Hunt Oil Company's J. W. Gibson 4, C SE SE 5-2s-11e.

Highlands County: Humble's Carleton Estate 1, C SW NE 34-38s-29e, is still fishing at 6701 feet.

Charlotte County: Humble's Lownes-Treadwell 1, C SW NE 17-42s-23e, is below 2130 feet in dolomite and waiting on rig repair parts.

Gulf County: The Pure Oil Company's Kate Gaskin 1, NE NW 19-5s-9w, is drilling below 3738 feet.

Monroe County: O. D. Robinson's State 1, NEc NW¼ 29-59s-40e, is drilling at 3665 feet.

☆ California

Del Valle Area Well Credited As Discovery

The Texas Company credited with discovery of a new field in the Del Valle area, although first production small; Shell Oil Company's deep test at Long Beach swabbed less than 200 barrels, is coring ahead; Standard Oil Company's deep test at Lost Hills making new hole after coring 477 feet of oil-stained gray sand.

Los Angeles County: The Texas Company's Kern 1, discovery 18-4n-17w, was swabbed into production, making 196 barrels of 29.3-gravity clean oil the first 24 hours. The well is located in the Del Valle area. It drilled to 3114 feet and plugged back to 3010 feet with 7-inch casing cemented at 2817 feet. Production is from the Miocene, probably the Videgain equivalent. Gravel pack was landed opposite 194 feet of 5½-inch perforated liner. Depths of the Del Valle wells not far away range from 5345 to 6125 feet, with average gravity of 30 to 33. Several additional wells will be drilled in the new area.

Shell Oil Company's Stakemiller-Rose, deep test at Long Beach, swabbed 168 barrels of 30-gravity oil, of 7 percent cut, with bottom at 10,672 feet. Hole is now being deepened to sample lower zones. Same company's Alamitos 48-A is drilling slowly ahead at 12,090 feet in the same field.

Kern County: Standard Oil Company's Cahn 58-4, deep test in the Los Hills old gas field, is drilling below 9165 feet in shale after logging 477 feet of oil-stained gray sand.

C. C. M. Oil Company's Bates 2, 20-25-19, deep test for the Devils Den area, is drilling and coring in hard brown shale at 8065 feet. Oil showings were noticed on the ditch from 8043 to 8047 feet.

Imperial County: Texas Company's Grupe-Engrebretson, 8-16s-16e, desert area, near Holtville, is running 9⅝-inch casing with present redrilled depth at 7950 feet. Old depth was 9014 feet.

Amerada Petroleum Corporation's Veysey 1, 9-13s-14e, near Brawley, is drilling and coring at 6702 feet. No information is available other than depths.

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☆ Michigan

Mecosta Test Completed; Two Offsets Drilling

Mecosta County test completed and two offsets drilling; Isabella County field extended; continued expansion of Ionia County pool indicated.

Mecosta County: Smith Petroleum Company's Ortwein 1, SE NW NE 7-14n-7w, is pumping 30 to 40 barrels of oil and five to 15 barrels of water from Dundee at 3688 feet. Two offsets are now drilling.

Michigan Consolidated Gas Company's Bush 1, C SW 4-15n-9w, Colfax Township, 3 miles east of Big Rapids, gauged 9,280,000 cubic feet of gas in Stray sand at 1295-1300 feet. The company has completed a west offset for a gas producer in the same section.

Isabella County: Sohio Petroleum Company's Dague 1, N½ SE SE 30-16n-6w, logged Dundee objective at 3759 feet and flowed 78 barrels of oil in 1-hour open test at 3763 feet, extending the field ¼ mile west and maintaining a record of no failures out of 28 wells drilled. The well is producing 20 feet lower than the east offset and 39 feet lower structurally than the field discovery.

Ionia County: C. L. Maguire, Inc.'s Dalton 1, NW NE NE 6-8n-5w, flowed 15 barrels per hour natural from Traverse lime pay at 2651-53 feet, suggesting a continued southwest expansion of the pool.

☆ Illinois Basin

Jefferson County, Illinois, Has McClosky Discovery

Gulf completes McClosky lime discovery east of West Divide pool, Illinois; Hamilton County test is apparent Aux Vases discovery; pool opened west of South Rural Hills pool; Brownsville pool, White County, given new producing horizon; Henderson County, Kentucky, has discovery.

Gulf Refining Company's Green 1, SW NW NE 23-1s-3e, ¼ mile east of the West Divide pool, Jefferson County, has been completed as a McClosky lime discovery.

The well pumped 1200 barrels of oil in 24 hours from pay at 2730-40 and 2730-65 feet after 5000 gallons of acid.

Hamilton County: T. B. Dirckson's Presley 1, SE SE SW 5-6s-6e, 1¼ miles northeast of the Rural Hills pool, apparently is an Aux Vases sand discovery providing a sizeable extension to the proven area. Pipe has been set at 3085 feet for a test of saturation at 3090-3115 feet, which on a 30-minute drill-stem test showed gas in ten minutes, 100 feet of oil and 175 feet of oil-cut mud.

Tide Water Associated Oil Company's Johnson 1, SE SE NW 33-6s-5e, has opened a new pool 2 miles west of the South Rural Hills pool. After a 45-quart shot in the Aux Vases sand the well swabbed 5 barrels of oil per hour from 3230-50 feet.

Jasper County: Robinson and Puckett have a discovery 1¼ miles northeast of the Willow Hill pool. The well is Roberts 1, NE NE SE 26-7n-10e, Operators were waiting on cement with 5½-inch pipe set at 2590 feet for a test of McClosky pay at 2600-10 feet.

White County: The Brownsville pool, formerly a producer only in the Rosiclare pay, has been given a new producing horizon at H. H. Weinert's Ksiner-Turner 2, NW NE SE 31-5s-9e. On completion test in the Paint Creek sand, the well produced 100 barrels of oil in 24 hours from 2890-2900 feet.

Wayne County: Fulk-Helgen have extended the North Sims pool ½ mile north with Weaver 1, NW SW SE 4-1s-6e. On final tests of the McClosky the well was completed for 200 barrels of oil in 24 hours on pump.

Kentucky

Fleming and Swann's Pottinger 1, 2 miles west of the Rock Springs pool, Henderson County, is a discovery in the Cypress sand. Operators are waiting on cement with 5½-inch casing at 2260 feet for test of pay at 2260-70 feet. On a 1 hour drill-stem test the well made 400 feet of oil and 180 feet of oil-cut mud.

☆ Rocky Mountain Area

Four Wildcats Slated for Crook County, Wyoming

Crook County, Wyoming, to get 4 wildcats; Steamboat field is active, as is Mush Creek; Church Buttes test down nearly half way; Rangely has near-completions; Stanolind wildcats watched.

Wyoming

Continental Oil Company's Goodstein 1, discovery well at South Elk Basin, ran 7-inch casing to 5703 feet and 5½-inch liner to bottom at 7169 feet and perforation points were being selected in the thick Tensleep section, where large production is assured.

The Tensleep was found at 6961 feet and cores showed mostly heavy saturation to streaked saturation to 7124 feet with 6 drill-stem tests at different intervals testing good production as high as an estimated 148 barrels per hour. A final drill-stem test from 7128 feet to bottom at 7169 feet, open 30 minutes, recovered 20 feet of drilling mud with no show of oil, gas or water.

Natrona County: Kerlyn Oil Company's Government 1, Midway Dome test to the Tensleep, SE NE 23-35n-79w, became a "tight" well after going below 7500 feet into what is believed to be the Embar formation, a prospective zone above the Tensleep.

Crook County: Williams Brothers and Victaulic were moving in on Government 1, NW NW SW 15-55n-67w. This will be the first of 4 wildcat tests by these operators on prospective structures in this vicinity on acreage acquired by farmout from Continental. The contract is believed to require tests to the Dinwoodie or Minnelusa horizons.

Fremont County: British American Oil Company was completing Tribal "C" 5, NE NW SW 32-4n-1w, at Steamboat Buttes. A drill-stem test from 5285 to 5310 feet, total depth, open 1 hour, recovered 190 feet of oil-cut mud and 900 feet of oil from the Sundance sand.

The same operators were moving in rotary for Tribal 6 and digging pits on location for Tribal "C" 5 while their north outpost test, Tribal "E" 5, NE NE SW 5-3n-1w, 2 miles from proven production, has conductor pipe set and was waiting on cement.

Weston County: Frank Eblem's Government 1, second test in the new Mush Creek pool, has drilled fast to below 3300 feet with production expected near 3600 feet, where the section will be cored for the first time.

Uinta County: Mountain Fuel Supply Company's Unit 1 at Church Buttes, 8-16n-112w, interesting wildcat and proposed deepest test for the Rocky Mountain area, was changing over to 4½-inch drill pipe at 5200 feet.

Colorado

In the Rangely field, The California Company's Fee 2, SW SE 29-2n-102w, was preparing to drill-stem test at a total depth of 5555 feet. Fee 3, SE NW 29-2n-102w, has completed hole to 5643 feet and was drilling plug at 5637 feet. California's Gray 8, SE SE 24-2n-103w, topped the Weber at 5765 feet and was near 6127 feet.

Stanolind Oil and Gas Company's Scott 1, C NE NW 20, 1n-93w, Meeker Dome in Rio Blanco County, wildcat test to the Weber is drilling below 550 feet.

Montana

Stanolind's N.P.R.R. 1, SE SW NW 27-2s-50e, Powder River County, 8000 foot wildcat test, first to this depth in the north end of the large Powder River Basin, located locally in the Mizpah area, was drilling below 2250 feet.

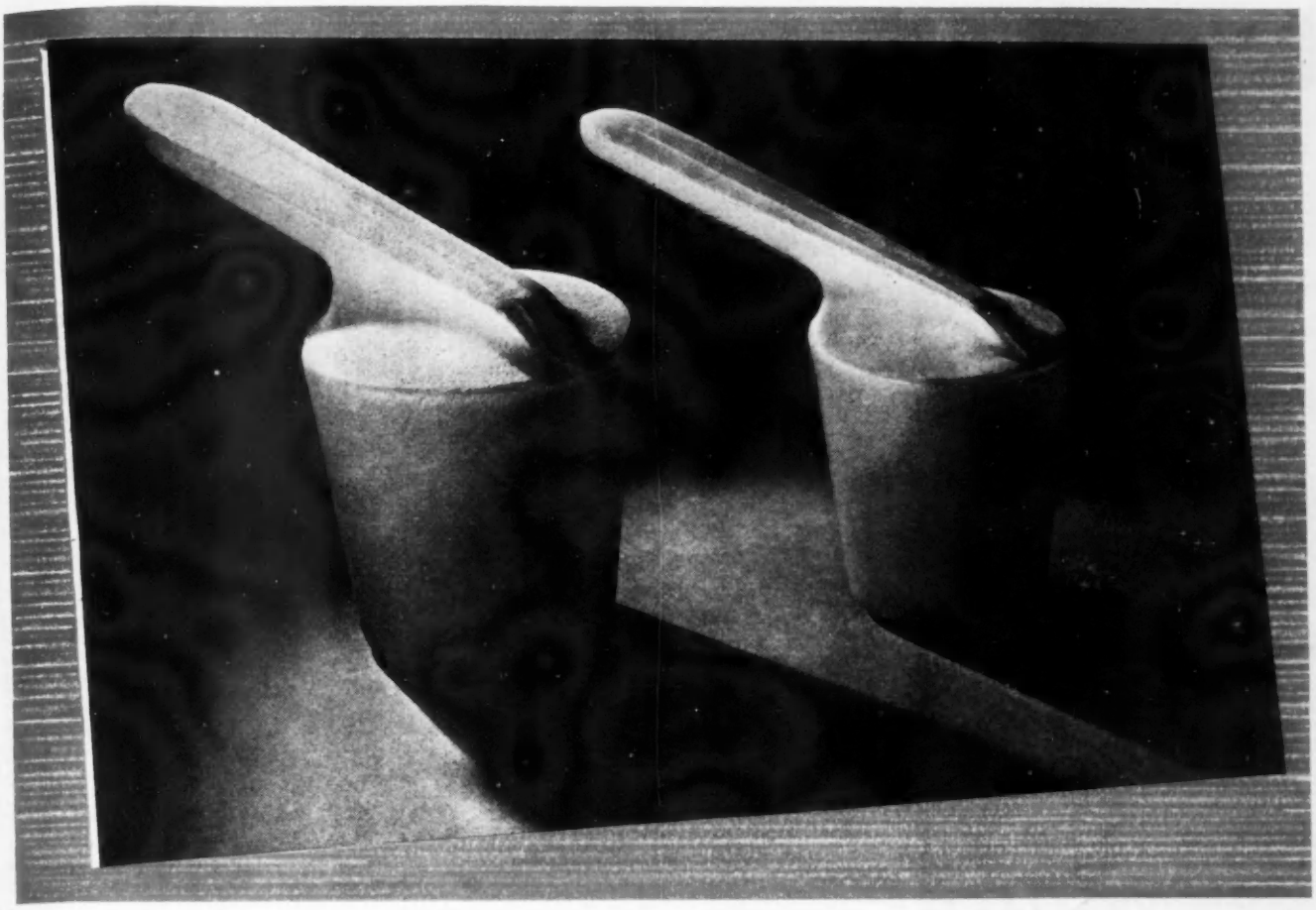
☆ Canada

West Parallel of Conrad Discovery Being Sought

Standard Oil Company of California is seeking a "west parallel" of the Conrad oil pool discovered by the company last July, and now rated the brightest prospect on the Alberta Plains. The company has begun a new wildcat, Conrad-Province 71-36D, in the southeast 10 acres of lsd 4 36-5-16w4, 3 miles west of the current Conrad producers and 2 miles west of the Conrad-Province 75-32B, which reached a Madison limestone high without encountering the Ellis sand, the Conrad oil horizon.

California-Standard has swung several miles east and down the east flank of a limestone high tested by several wildcats during the past year. A new wildcat, Foremost-Province No. 3, is being drilled in the southeast 10 acres of lsd 9 15-7-12w4. The venture is about 22 miles east and north o fthe Conrad pool, on the South Alberta Plains.

McColl-Frontenac Oil Company, Canadian affiliate of The Texas Company, has taken up Crown Reservations totalling 187,000 acres on the Southeast Alberta Plains, extending north from the Montana border for 30 miles, and tying on the southt of large McColl-Frontenac and California-Standard reservations previously acquired in that section of the province. A large scale geological and geophysical program will start this spring.



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CALIFORNIA WILDCATS

Kern County—Failures: Wilkern Oil Co.'s Landers 1, 17-28s-28e, Kern River area, abnd 982 ft.

Standard's (Navy) 86-1B, 1-31s-23e, Elk Hills, abnd 2830 ft.

Los Angeles County — Failures: Ohio's Legrand 1, 30-1s-9w, San Jose Hills area, granite 6082 ft, abnd 6141 ft.

Thos. P. Pike's Pike-Bolsa-British American Stern 1, 14-3s-11w, West Coyote area, abnd 5598 ft.

Shell's Davey Corehole 1, 25-2n-17w, Chatsworth area, abnd 1827 ft.

Sacramento County — Failure: Texas Co.'s Walnut Grove 1, 35-5n-4e, Walnut Grove area, base Capay 3873 ft, abnd 4482 ft.

ILLINOIS WILDCATS

Jefferson County—Failure: Ben H. Nation's Schuster 1, se se sw 8-2s-4e, abnd 3025 ft.

Wayne County—Failure: Ashland O&R Co.'s Molt 1, nw nw se 30-1n-8e, abnd 3225 ft.

White County—Failure: Deep Rock's Phipps 1, sw sw sw 29-5s-9e, abnd 3312 ft.

INDIANA WILDCAT

Parke County —Failure: Craig & Phillips' Hampton 1, nw se se 10-15n-8w, abnd 1695 ft.

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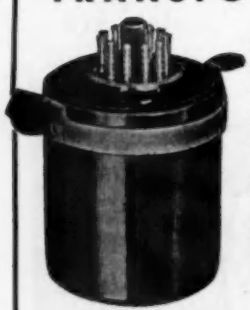

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KANSAS WILDCATS

Barber County—Failure: J. M. Huber's Mills 1, c sw¼ 33-30s-14w, Arb 4720 ft, abnd 4735 ft.

Butler County—Failures: Skelly's Smith 1, swc se 9-28s-5e, Miss 3117 ft, Mise 3206 ft, Simp 3225 ft, Arb 3235 ft, abnd 3244 ft.

Glenn Smith's Red Ranch 3, nwc se 4-23s-8e, Miss 2576 ft, abnd 2580 ft.

McPherson County—Failure: Barbara et al's Blaine 1, nw nw 36-17s-1w, Land 2192 ft, Miss 2805 ft, abnd 2842 ft.

Sedgwick County—Failure: Beech Aircraft's Brooks 1, ne se nw 36-28s-2e, Simp 3273 ft, Arb 3338 ft, abnd 3347 ft.

Sumner County—Discovery: El Dorado Ref. Co.'s Patterson 1, sec ne 23-33s-2e, shot 20 qts Bartlesville sd 3268-80 ft, shot 34 qts 3263-78 ft, pump 15 bbls, td 3280 ft.

KENTUCKY WILDCAT

Hopkins County — Failure: B. G. Pratt's Lanthrop 1, 13-H-23, abnd 1815 ft.

NORTH LOUISIANA WILDCATS

Caldwell Parish—Failure: Atlanta Ref. Co.'s Tremont Lumber Co. 1, 6-13-2e, abnd 6700 ft.

De Sota Parish—Failure: H. C. Owens' L. C. Dickson 1, 2349 fr el 480 fr nl 23-14n-13w, abnd 2855 ft.

SOUTH LOUISIANA WILDCAT

St. Mary Parish—Failure: Hunt Oil Co.'s St. Mary Bank & Trust Co. 1, start nec sect 8 go s 10° 31 mins w 551.1 th s 62° 15 mins w 900 to lcn in 8-15s-12e, jnkd and abnd 12,470 ft.

MICHIGAN WILDCATS

Mecosta County—Colfax Gas Field Discovery: Michigan Consolidated Gas Co.'s Bush 1, c sw 4-15n-9w, Colfax twp, elev 1036 ft, Stray sand 1287 ft, pay 1295 to 1300 ft, gauged 9,280,000 ft, td 1301 ft.

Wheatland Oil Field Discovery: Smith Petroleum Co.'s Ortwein 1, se nw ne 7-14n-7w, Wheatland twp, elev 1005 ft, Dundee 3684 ft, pay 3685-87 ft, sw 3688 ft, pump 37 bbls oil 6 bbls wtr, td 3688 ft.

Midland County—Failure: Rowmor Corporation's Joynt 1, ne ne ne 36-16n-1e, Dundee 3754 ft, abnd 4010 ft.

Missaukee County—Failure: Turner Petroleum Corporation's Meyering 1, n½ ne se 29-21n-7w, Dundee 3971 ft, abnd 3975 ft.

Saginaw County—Failure: Shell Oil Co.'s Nelson 1, nw nw ne 13-11n-2e, Dundee 3033 ft, so 3060 ft, abnd 3130 ft.

MICHIGAN NEW PAY TEST

Genesee County—Otisville: H. H. Heinig's Woodrow 1, nw sw sw 12-9n-8e, Forest twp, deepened from 1533 ft to 2647 ft, abnd.

MISSISSIPPI WILDCATS

Marion County—Failure: Gulf's E. H. Bradshaw et al 4, n&e swc se se 21-3n-17w, elev 287 ft, cap 4630 ft, anhy 4690 ft, salt 5635 ft, abnd in salt 7200 ft.

Rankin County—Failure: George W. Lyles' L. L. Billings 1, swc se ne 11-4n-1e, elev 297 ft, abnd 4818 ft.

OKLAHOMA WILDCATS

Comanche County—Failure: T. H. McCasland's School Land 1, sw sw ne 16-1n-9w, Cong 2635 ft, Arb 2725 ft, abnd 2732 ft.

Garfield County—Discovery: Cities Service's Mariner 1, nw ne nw 6-22n-3w, Arb perf 5247-97 ft, flow 2500 bbls 41.5-gr oil 2 mln gas, ¾-in, td 5297 ft.

Lincoln County—Failure: Stephens Pet. Co.'s Blum 1, se nw nw 31-14n-3e, Hunt 5077 ft, abnd 5395 ft.

Logan County—Failure: Phillips' Dublin 1, ne nw 18-15n-4w, Wx 7580 ft, abnd 7585 ft.

Murray County—Failure: Burres-Ellis et al's Wolf 1, nw ne nw 17-1n-2e, abnd 2501 ft.

Stephens County—Failure: Fidelity Royalty Co.'s Russell 1, nw nw se 29-4s-9w, Arb 2538 ft, abnd 2603 ft.

WEST TEXAS WILDCATS

Andrews County—Failure: Humble's Jones 1, c nw ne PSL 17, blk A-40, 1 mi s of 10,929-ft failure, elev 3317 ft, anhy 1525 ft, San Andres 4370 ft, Glorietta 5570 ft, Devonian 8282 ft, abnd 8384 ft.

Coke County—Failure: Harley Sadler et al's J. R. Mims 1-B, 1484 ewl 1585 nsl T&P Ry. 39, blk W, abnd 1794 ft.

Crockett County—Failure: Guffey Drl. Co.'s Thompson-Watchorn 1, 1689 nsl 6690 wel I&GN Ry. 73, blk 1, elev 2226 ft, Yates 795 ft, abnd 1253 ft.

Crane County—Failure: Sun's Roberdau 1, c e¼ of e¼ H&TC Ry. 19, blk 35, elev 2370 ft, anhy 690 ft, Yates 1060 ft, Grayburg 1903 ft, San Andres 2070 ft, Devonian 5021 ft, base chert 5156 ft, Silurian 5150 ft, Tulip Creek 5420 ft, Ellenburger 6338 ft, abnd 6415 ft.

Gaines County — Failure: DeKalb Agricultural Assn.'s Breckon-Fullerton 1, c se se PSL 13, blk AX, elev 3440 ft, anhy 1965 ft, structurally low, abnd 3364 ft.

Pecos County—Failure: Milton Unger et al's McMurtry-Magnolia 1, 2310 fr swl 990 fr sel H&GN Ry. 66, blk 10, elev 2464 ft, abnd 1747 ft.

Runnels County — Failure: Eltex's Wilkerson 1, 330 ft out nwc S.P. Ry sect 17, elev 2024 ft, abnd 3634 ft.

Terry County — Failure: Stanolind's Texas L&Mtg. Co. 1-B, c nw sw PSL 17, blk C-37, elev 3240 ft, anhy 3260 ft, Yates sd 3130 ft, brown li 4090 ft, Grayburg 4300 ft, abnd 7012 ft.

Upton County—Failure: J. W. Ellis & Son's Burleson 1, 330 ft out n cor of s¼ of n¼ H&TC Ry. 76, blk 35, elev 2447 ft, anhy 503 ft, salt 540 ft, abnd 2305 ft.

Winkler County — Failure: Humble's Scarborough 1-B, c ne ne PSL 11, blk 27, elev 2850 ft, abnd 3500 ft.

Yoakum County — Failure: Honolulu Oil Corp.'s Hudson 2-B-75, sw ne ne sec 75, blk D, J. H. Gibson sur, elev 3711 ft, brown li 4020 ft, San Andres 4380 ft, abnd 5210 ft.

WEST TEXAS OUTPOST

Pecos County — Fort Stockton Extension: Texas Co.'s Riggs 1, c se ne T.&St.L. Ry. 8, blk 146, 1-11/16 mi s exten, elev 2885 ft, Yates 2840 ft, flow 169 bbls 35-gr, via ¼-in, shot 40 qts nitro 2890-2903 ft, Yates sd pay 2887-2903 ft.

WEST TEXAS NEW PAY TESTS

Andrews County — Fullerton Deep Failure: Magnolia's Ralph 1-A, c nw se PSL 12, blk A-37, 1 mi w of Clear Fork prod, elev 3344 ft, San Angelo 5500 ft, Clear Fork 5980 ft, Devonian 8114 ft, Simpson 9935 ft, Ellenburger 10,655 ft, abnd in wtr 10,991 ft.

Andrews County — Fuhrman-Mascho Deep Failure: N. G. Penrose's Parker 1, 2640 ft ewl 152 ft nsl sect 111, P. J. Harbellis sur, elev 3215 ft, Yates sd 2920 ft, San Andres 4345 ft, Clear Fork 5920 ft, Fullerton zone 6940 ft, pump 42 bbls 31.5-gr oil, 15% bs&w, field's regular San Andres pay, shot 580 qts nitro 4370-4555 ft, td 7810 ft, pb 4557 ft.

WEST CENTRAL TEXAS WILDCATS

Callahan County—Failure: O. B. Perot et al's Halstead 1, 150 ft out nec nw¼ BBB&C Ry. sect 121, elev 1733 ft, abnd 1102 ft.

Hamilton County—Failure: C. I. Production Co.'s Lund 1-A, 294 ft fr se&swl of 773-ac tr, B. A. Carter sur, Marble Falls 3240 ft, abnd 3468 ft.

SOUTH CENTRAL TEXAS WILDCAT

Atascosa County—Failure: J. W. Gorman-McDermott's U. A. Domsch 1, 933 ne of nec J. T. Russell sect 1223 440 e of sel of sect 1222½, abnd 3940 ft.

SOUTHWEST TEXAS WILDCATS

Starr County—Failure: Geo. H. Echols' M. M. Garcia 1, 330 fr n&s&el blk 17 sh 7-B porc 91 40-ac lse, abnd 4448 ft.

Webb County — Failure: Texas Gulf Prod. Co.'s A. M. Bruni Est. 1-B, 2500 fr wl 4200 fr m/nly/sl 2000-ac lse, 13,000 se of nwl J. V. Borrego Gr, abnd 5309 ft.

Zapata County—McDermott Oil Discovery: Humble's Juana Y. McDermott 1, 1980 fr swl 660 fr nwl 1644-ac tr, Sernardo Gutierrez porc 14, perf 54 shots 2609-18 ft, flow 5.5 bbls oil, ⅛-in, tp 0 lbs, cp 140 lbs, td 7004 ft.

LOWER TEXAS COAST WILDCATS

Brooks County—Failure: Humble's B. A. Skipper, Jr., 1, 660 s&w fr nwc S. S. Demangell 328-ac tr, 660 fr e&nl of tr 1, Rachal blk, La Encantada Gr, 9532.5-ac lse, dst 6106-13 ft rec 10 ft dark cond, 10 ft gas-cut mud, abnd 6288 ft.

Hidalgo County — Failure: Hamman O&G Co.'s John & George Hamman 2, 5278 fr el 11,016 fr nl Jackson subdvn Milado tr, San Salvador del Tule Gr, 2400-ac lse, 3700 ne of Well 1, abnd 8155 ft.

Jim Wells County—Failure: H. J. Porter's Gertrude Rehmet Hoffines 1, 467 fr sel 833.2 fr swl 52.7-ac lse, Wm. Parks sur, abnd 5430 ft.

Karnes County—Failure: Chas. Harris' Hilmer Monson 1, 330 fr ne&nwl 440-ac lse, P. B. Butler subdvn, sur 8, abnd 55 ft.

UPPER TEXAS COAST WILDCATS

Chambers County — Condensate Discovery: Texas Co.'s Josephine Connerly 1-A, 660 fr s&wl se¼ sect 92 HT&B sur on 320-ac lse, perf 32 shots 8397-8405 ft, flow 2,018,000 gas, 15 bbls 52.9-gr cond per min, 12/64-in, tp 3075 lbs, td 8609 ft, pb 8410 ft.

Matagorda County—Failure: Union of Calif.'s Emma Larsen Graddy 1, 3400 fr nl 5360 fr el 722.8-ac lse, Daniel Etherton Lge, 3½ mi w of Markham, elev 47 ft, abnd 9285 ft.

UPPER TEXAS COAST OUTPOST

Chambers County — White's Lake - Jackson Pasture Extension: Standard of Texas' Fannie May White 2, 2500 fr el 853 fr sl Solomon Brill sur, 742-ac lse, 2653 ne of Crosby et al's Mayes White 1, elev 14 ft df, perf 24 shots

8886-92 ft, flow 4,413,000 gas, ¼-in, some cond, 220,000,000 gas open flow, tp 2975 lbs td 9025 ft.

EAST TEXAS BORDER COUNTIES WILDCAT

Shelby County—Failure: Mass-Tex Oil Co.'s Pickering Lbr. Co. 3 4290 n 2970 e of swc W. J. Crain sur, lot 10, blk 9, abnd 3838 ft.

EAST TEXAS WILDCATS

Camp County—Failure: M. E. Davis et al's Shelby 1, 470 ft ewl 2565 ft snl of Thomas Williams sur, elev 448 ft, Pecan 2453 ft, Ector 3817-51 ft, Woodbine 4150 ft, Georgetown 4750 ft, Ft. Worth 5267 ft, Duck Creek 5422 ft, Goodland 5789 ft, Paluxy 5850 ft, Glen Rose 6223 ft, massive anhy 7335-7496 ft, Pittsburgh 8154 ft, abnd 8264 ft.

Robertson County — Failures: J. A. Arhopulos et al's Bolton 1-A, 360 ft snl 600 ft wel of 50-ac tr, Jose M. Viesca sur 46, elev 476 ft, abnd 1254 ft.

Armstrong & Richardson's Marsh 1-A, 1320 ft ewl 660 ft snl of Hugh Henry sur, elev 457 ft, abnd 715 ft.

NORTH TEXAS WILDCATS

Archer County—Failures: Delbar Co.'s Forester 1, 990 ft out sec blk 39, J. W. Harris subdvn, abnd 1442 ft.

F. L. Harvey et al's J. D. Lasater, Jr., 1, 150 snl 1350 ewl of M. Pickens sur A-341, abnd 1255 ft.

Republic Natural Gas Co.'s Powell 1, 500 snl 150 wel lot 4, S.P. Ry. sur A-406, sect 1, abnd 1377 ft.

E. P. Griffin and Frank Wood's Mankins 1, ne ne ne H&TC Ry. 12, blk 4, elev 1152 ft KMA li 4048 ft, Bend 4967 ft, abnd 5007 ft.

Cooke County—Failures: H. D. Egger et al's Wade 1, 990 wel 1200 nsl of Jos. Worley sur A-1129, Ellenburger 2354 ft, abnd 2407 ft.

Nu-Enamel Oil Operating Co.'s Ramsey 1, 1250 snl 1320 ewl of T. J. Hutchinson sur A-1677, elev 1050 ft, Ellenburger 2250 ft, abnd 2365 ft.

Young County: Blackwell O&G Co.'s Kimbrell 1, 920 ft out sec of W. A. Crumpton sur A-1391, abnd 3200 ft.

NORTH TEXAS NEW PAY TEST

Archer County—Vogtsberger Deep Discovery: Phillips' Bullington 1, 467 ft wel 1965 ft snl of 200-ac tr, M. Doyle sur A-120, elev 1030 ft, Vogtsberger li 4650 ft, Bend 5101 ft, Mississippi 5209 ft, Ellenburger dolomite 5233-7228 ft, base gradational Ellen 7804 ft, granite 7913 ft, flow 450 bbls 43.3-gr, ⅝-in, 8000 gals acid Ellenburger perf 5233-5415 ft, td 7915 ft.

TEXAS PANHANDLE WILDCAT

Deaf Smith County—Failure: Humble's Hyslop 1, c nw se 18-3n-1e, elev 4448 ft, Permian 1570 ft, San Andres 2710 ft, San Angelo 3465 ft, Clear Fork 5190 ft, Pennsylvanian (Cisco) 6090 ft, granite wash 6510 ft, granite 7803 ft, abnd 7805 ft.

WYOMING OUTPOST

Albany County—Big Hollow Failure: Front Range Oil Co.'s Govt. 1, c nw nw 20-15n-75w, Muddy sd 722 ft, wtr, abnd 729 ft.

WESTERN CANADA WILDCAT

Alberta Foothills — Folding Mt. Failure: Jasper Syndicate's (Imperial Oil, Anglo Canadian, Home Oil) No. 1, lsd 2 19-49-26w5th, Madison li 1207 ft, Devonian li 2978 ft, Fault to middle Blairmore 4900 ft, some gas in li, abnd 5096 ft.

WILDCAT STARTS

ALABAMA

Bullock County: Capitol O&G Co.'s Mrs. Ethel Gholston et al 1, sect 18-14n-22e, lcn.

CALIFORNIA

Kern County: British-American's Portals 21-3, 3-30s-29e, Race Track Hills area, lcn.

Crestmont Oil's S.P. 1, 33-26s-28e, Mt. Poso area, lcn.

General Pet.'s Bishop 3, 14-28s-28e, Round Mt. area, lcn.

Standard's Fullerton 2, 25-27s-23e, Semi-Tropic area, lcn.

Standard's Notz 2, 18-28s-22e, Lindsey Hills area, lcn.

Tide Water's No. 2, 17-27s-20e, North Belridge area, lcn.

Los Angeles County: C. G. Willis' Pansiti 1, 2-32s-12w, Bandini area, lcn.

Herley-Kelley's Orduno 2, 18-4n-17w, Del Valle area, lcn.

Orange County: Delaney Petroleum-John MacLoid's McCain 1, 17-6s-10w, Costa Mesa area, lcn.

D. W. Elliott's Well 1, 19-6s-10w, Costa Mesa area, lcn.

San Luis Obispo County: Norris Stamping & Mfg. Co.'s Dresser 1, 9-27s-13e, Paso Robles area, lcn.

Solano County: Standard's Teal Comm. 1, 27-4n-2w, Suisun area, lcn.

Ventura County: Shell's McBean 1, 33-3n-20w, Long Canyon area, lcn.

ILLINOIS

Hamilton County: T. Blake Dirickson's Presley 1, se se sw 5-6s-6e, lcn.

Marion County: Paul Doran et al's Young 1, se ne se 12-2n-1e, lcn.

Sangamon County: J. W. Taft et al's Fee 1, n½ se ne 15-15n-3w, dr.

Shelby County: Phillips' Dove 1, se se nw 9-9n-4e, lcn.

William H. Krohn's Barnes 1, nw ne se 31-11n-3e, lcn.

Wabash County: George Engle's McKendree College 1, sw nw se 15-1n-13w, lcn.

Wayne County: W. O. Schock's Bowyer 1, ne se ne 33-1s-5e, lcn.

Edmiston Drlg. Co.'s Oskvig 1, sw nw ne 10-3s-6e, lcn.

INDIANA

Daviess County: Crosby & Feltis' Hyatt Estate 1, sw sw nw 13-4n-7w, dr.

Sullivan County: Roy Myers' Hayes 1, se ne ne 26-8n-11w, lcn.

KANSAS

Barber County: Driller's Gas Co.'s Gant 1, se nw se 6-31s-13w, lcn.

Barton County: W. L. Hartman's Hoffmeister 1, sw sw nw 25-20s-13w, dr 150 ft.

Butler County: J. E. Morris' Holem 1, ne se 22-26s-5e, dr 860 ft.

K. T. Weideman's Farmer 1, se nw se 8-29s-8e, mirt.

Ellsworth County: W. M. Bartlett et al's Zahradink 1, se se nw 18-15s-10w, lcn.

Kingman County: B&R Drlg. Co.'s Theis 1, ne ne 13-29s-10w, dr 290 ft.

Marion County: Ward McGinnis' Loveless 1, nw sw 2-19s-4e, rum.

Rooks County: Ed Swearer et al's Bigge 1, nw sw 29-6s-18w, lcn.

Russell County: Derby Oil Co.'s Rogg 1, se sw 7-13s-14w, mirt.

Stafford County: Stanolind's Hughes 1, ne nw se 13-23s-12w, dr 166 ft.

Trego County: Continental's Strat 1-33, nw ne 25-15s-21w, lcn.

Woodson County: Donovan Engineering Co.'s Eads 1, nw ne ne 10-25s-15e, rum.

KENTUCKY

Crittenden County: Jewell Resnick's Dave Wood 1, 6-K-20, dr.

NORTH LOUISIANA

Sabine Parish: W. I. Nowling's Brown Lumber Co. 1, 1650 s&e nwc 11-7n-10w, lcn.

NORTH LOUISIANA

Sabine Parish: North American Oil Consolidated's Whitney 1, 330 n&e nwc ne¼ 5-9n-12w, 5700 ft test.

Claiborne Parish: F. A. Callery's Sallie Williamson 1, 330 n&w sec ne¼ 28-22n-7w, to Travis Peak.

Caldwell Parish: Atlantic Refining Company's Louisiana Central Lumber Co. 1, 1650 w 330 s nec 14-12-3w.

SOUTH LOUISIANA

St. Landry Parish: Phillips' Nienstedt 1, 2067 nly fr swc 20-4s-6e, th ely 1987 to lcn in 20-4s-6e, 12,500-ft test.

MICHIGAN

Allegan County: Neil Wagenaar's Willink 1, sw nw sw 19-4n-15w, lcn.

Ionia County: H. L. Foster's Jonston 1, ne nw sw 26-8n-8w, dr.

Kalamazoo County: Stuart Godfrey's Clark 1, ne sw se 34-3s-12w, dr.

Oil Producers, Inc.'s Stiver 1, se se se 26-4s-12w, lcn.

Kent County: Michigan Devonian's Van Ess 1, se nw nw 10-5n-12w, dr.

Fisher-McCall Oil Co.'s Eardley 1, se se se 32-6n-10w, rig.

Mecosta County: Gordon and Athas' Holcomb 1, sw ne ne 36-14n-9w, dr.

Montcalm County: Daily Crude Oil Co.'s Peterson 1, n½ ne sw 15-10n-8w, dr.

Allegan Pipe & Supply Co.'s Greenwald 1, ne ne ne 22-10n-7w, rig.

Muskegon County: Muskegon Development Co.'s Richards 1, sw nw ne 10-12n-15w, dr.

Newaygo County: M. B. Belden's Fawcett 1, ne ne ne 33-16n-14w, rig.

MISSISSIPPI

Greene County: Humble's Harry Stover et al 2, nec 20-3n-7w, mim.

Jones County: Gulf's E. L. Geiger 1, c se se 5-9n-11w, lcn.

Madison County: Carter Oil Co.'s J. B. Howell 1, nec 6-10n-4e, core test.

Scott County: Pan American Prod. Co.'s U.S.A. 1, nwc 26-5n-6e, mim.

Simpson County: Hunt Oil Co.'s Smith County Oil Co. 2, swc 7-10n-17w, lcn.

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HOUSTON

MONTANA

Toole County: H. M. Kluth's Lewis 1, c ne ne 21-34n-4w, dr.

NEW MEXICO

Eddy County: Schuster & Messinger's Anderson 1, c sw nw 31-19s-28e, 1500-ft test.

OKLAHOMA

Marshall County: Magnolia's Neff 1, sw se nw 25-5s-5e, c&p.

Pottawatomie County: Ashland O&R Co.'s Loman 1, ne sw sw 1-10n-4e, c&p.

Stephens County: J. S. Mauldin, Jr.'s Kolb 1, sw se sw 13-1n-4w, lcn.

WEST TEXAS

Andrews County: Humble's J. E. Parker 1, Martin deep test, c nw ne PSL 24, blk A-41, sw offset to 7036-ft Clear Fork disc, 11,000-ft Ellenburger test.

Val Verde County: B. E. Wilson et al's Wilson-Hodge 1, 1082 ft wel 420 ft snl of sect 57, blk E, on 19,000-ac lse, lcn.

WEST CENTRAL TEXAS

Brown County: E. J. Ruwaldt et al's Bourn Bros. 1, 6550 ft sw of n cor Thos. E. Rowe sur No. 132, th 3497 nw, but in Harmon Reed sur No. 131, 1500-ft cable test.

Jones County: Texas Co.'s M. O. Johnson 1, 330 ft out sec BBB&C Ry. sur, dk for Ellenburger test.

Taylor County: Alder Oil Co.-Merry Bros. & Perini's Sealy-Smith 1, 990 ft snl 330 ft wel l br 15, Lge 146, Grimes CSL sur, rig for 3000-ft cable test.

SOUTH CENTRAL TEXAS

Atascosa County: H. H. Howell's F. J. Jaksik 1, 467 fr nl 660 fr el of 98-lse, M. J. Perez sur 364, 7000-ft test, ru.

Bexar County: Walter Bode-Pegg Bros.' Volney Peterson 1, 300 fr n&el 100-ac lse, H. Virm sur 195, 1200-ft test.

Val Verde County: B. E. Wilson's Wilson & Hodge 1, 1082 fr el 420 fr nl sur 57, blk 4, 19,000-ac lse, 1500-ft test.

Williamson County: Wilson Harding-F. B. Carroll's J. E. Lane 1, 330 fr ne&nwl 130-ac lse, T. E. Shell sur, 2000-ft test.

SOUTHWEST TEXAS

McMullen County: Santa Clara Oil Co.'s Volney M. Brown et al 1, 1320 fr n&wl R. H. Brown sect 8, 3600-ac lse, 6500-ft test.

Starr County: Panal Oil Co.'s Lillie May Baird 1, 1300 fr sl 330 fr el sh 4-A Porc 82 and 50-ac lse, 1800-ft test.

Zapata County: A. E. Weiderkehr's Maria T. G. Garcia 1, 330 fr se&swl n¼ blk 11, sh A, Charco Redondo Gr, lcn.

LOWER TEXAS COAST

Goliad County: Dan Auld's A. W. Hardt 1, 467 fr n&el 147-ac lse, Albert Roeder sur, 6 mi e of Slick fld, Humble farmout, 8500-ft test.

Jackson County: Butcher-Arthur's J. R. Davis et al 1-A, 660 fr s&el 40-ac lse, Santa Teresa sur, lot 17, 1½ mi se Laward, 8000-ft test.

Butcher-Arthur's Andrew Lorenzen 1-B, 330 ft nwl 990 fr swl e½ se¼ lot 5, 238-ac lse, John J. Linn sect 5, 8500-ft test.

Victoria County: Gulf's J. J. Murphy 1, 330 fr s&el 1770-ac lse, Juan Flores sur, 6000-ft test.

UPPER TEXAS COAST

Harris County: Eltex's Henry Koinm 1, 1400 fr nwl 375 fr swl 60.39-ac lse, 3300 nw of sel 1807 ne of swl of A. Mayes sur, Westfield area, 7500-ft test.

Sun's Foster Lbr. Co. 1-B, start s cor Amasa Turner sur, at west fork of San Jacinto river go ne alg sel sur 2510.6 th nw at ra 917.8 to lcn, 8500-ft test.

Matagorda County: Texas Co.'s C. G. Hamill 4 (owdd), 7900 n of sl 11,082.6-ac lse, 7900 n of sl 6435 w of wly/el Wm. Baxter sur, 4100 s se of No. 2 dry hole, temp abnd 7288 ft, now washing.

Trinity County: Magnolia's Bolton 2, c lot 80, 5940 fr sl 7000 wly at ra fr ely/l 5000-ac lse, Henry Bond Lge, 11,000-ft test.

EAST TEXAS BORDER COUNTIES

Cass County: J. V. Fleming's Betts 1, McCown survey, 4½ mi sw of townsite in Marietta area, Travis Peak test.

EAST TEXAS

Cherokee County: Humble's S. H. Maness 1, 660 ft ewl 860 ft snl of 110-ac tr, or 1600 ft nsl 14,150 ft ewl of Jose M. Musquez sur, mim for Travis Peak test.

Wood County: Algord Oil Co.-Homer W. Snowden's J. R. Jordan Jr. 1, 660 ft out sec of 98-ac tr and John Roddin sur A-494, Travis Peak test.

NORTH TEXAS

Archer County: C. L. Abercrombie-Frank Wood's C. L. Abercrombie 1, 750 ft out sec blk 82, J. W. Harris subdvn, 1500-ft test.

L. Eric Jones and Dellenbarger Machine Co.'s V. Seay 1, 1350 nsl 750 wel blk 63, J. W. Harris subdvn, lcn.

Staley Oil Co.'s Burt Lowery 1, 1082 snl 150 ewl of w 60-ac blk 50, J. W. Harris subdvn, 1400-ft rotary test.

Childress County: Texas Co.'s F. & M. Trust Co. 1, c ne nw W&NW Ry. 644, blk H, 5 mi nw Childress, 8000-ft Ellenburger test.

Clay County: J. J. Perkins-A. P. Kouri & Graham's Stine 1, 660 ft out sec blk 62, Bacon subdvn, 5500-ft Ellenburger test.

Cooke County: Nu-Enamel Oil Operating Co.'s M. C. Wilson 1, 330 ft out nec of 107-ac tr, B. J. Thompson sur A-1006, 2500-ft rotary test.

King County: Rogers Lacy-L. S. Flannery's W. R. Ross 1, 330 nsl 330 fr nwl of n½ of J. B. Townsend sur, 6000-ft test.

Wilbarger County: Miller Marine Decking Co.'s W. E. Bond 1, 467 ft out nwc H&TC Ry. 32, blk 16, 6500-ft Ellenburger test.

Nat. Assoc. Pet. Co.'s Sam Kelly 1, nw nw nw H&TC Ry. 30, blk 13, 5200-ft test.

Young County: W. H. Peckham et al's Pace & Strange 1, 1666 nsl 750 ewl of blk 10, A. Rohus sur A-240, lcn.

WYOMING

Crook County — Hulette Creek: Williams Bros.-Victaulic's Govt. 1, nw nw sw 15-55n-67w, dk.

WESTERN CANADA

South Alberta Plains—Conrad: California-Standard's Conrad-Province 71-36D, se lsd 4 36-5-16w4th, dr.

Foremost: California-Standard's Foremost-Province 3, se lsd 9 15-7-12w4th, dr.

South Saswatchewan—Vera-Unity: Bata Petroleums' Bata 4, lsd 1 25-39-23w3rd, Viking sd gas test 1700 ft.

Bata Petroleums' Bata 5, lsd 1 26-39-23w3rd, lcn.

Bata Petroleums' Bata 6, lsd 11 25-39-23w3rd, lcn.

The OIL WEEKLY'S TRADING POST

USED EQUIPMENT FORUM

CLASSIFIED ADS . . . EQUIPMENT . . . SERVICES . . . PERSONNEL

FOR SALE

■ For Sale: 1 Ideal 10 x 10 double drilling engine, A-1 Condition. Price $200.00. 2 Ideal 6¾ x 12 x 14" drilling pumps. Price $150.00 each. Located my yard, Vicksburg, Mississippi. D. H. Williams.

■ FOR SALE: General Electric Induction Motor—Model 2475—15/30 H.P.—3 Phase—60 Cycle—440 Volts with grid and jack shaft. Neil Moore, Eastland, Texas.

■ FOR SALE: Heavy Duty No. 45 Star Spudder, with 60' telescoping mast complete, like new, 120 h.p. drilling motor and complete string cable drilling tools and fishing tools—15" to 5", wire lines, etc. P. O. Box No. 165, Eastland, Texas.

FOR SALE

8½" Emsco Water-cooled Drawworks with single 40" Model R Hydramatic Brake. Completely overhauled with new sprockets, refaced clutches, new keys and keyways. Good for 11,000' drilling. Located at Houston, Texas.

Write

HOLMES DRILLING COMPANY

Esperson Building, Houston, Texas

SITUATION WANTED

■ Man with thirty years experience in the land and producing sections of the oil business as individual producer and part of this time as vice-president and executive of a Major Independent Oil Company wants connection with independent interests or financing to carry on developments and other work in connection with producing business. Address: Box 11, c/o The Oil Weekly, Houston, Texas.

ADVERTISING RATES

TRADING POST SECTION

Regular classified advertisements for this special section, set in type this size without border, take flat-rate of 7 cents per word for the first insertion and 5 cents per word for each subsequent insertion of same copy. Display advertisements for this section, set in suitably larger type with ruled border, are $5.00 per inch for the first insertion and $4.00 per inch for subsequent insertions. Remittance must accompany copy which should be sent to:

Trading Post Section, The Oil Weekly

P. O. Box 2608 Houston 1, Texas

HELP WANTED

—WANTED—

MECHANICAL AND ELETRICAL ENGINEER

Oilfield Equipment Manufacturer of International prominence located in Beaumont, Texas, desires to employ qualified Mechanical or Electrical Engineer to assist in the design of D.C. Electric Drilling Rigs. Good salary, with unlimited post-war possibilities. All answers strictly confidential. Address: Box 6, c/o The Oil Weekly, Houston, Texas.

■ Wanted by a consulting geophysical organization, Petroleum Engineers with Hayward Mudlogging experience or its equivalent. Immediate openings in Venezuela. Excellent opportunity for advancement to managerial positions throughout the world. Address: Box 36, c/o The Oil Weekly, Houston, Texas.

WANTED

Manufacturer's representative calling on makers of oil field equipment in Oklahoma to sell a well established complete line of roller bearings to existing and potential trade. Engineering background essential. Related lines important. Commission. Address: Box 22, c/o The Oil Weekly, Houston, Texas.

Eastman Oil Well Survey Company has position open for field Sales and Service man in Louisiana Gulf Coast area. Applicant must have good knowledge of and be well acquainted in oil and drilling industry. Attractive salary. Expenses and car furnished. Address written application to Box 890, Lafayette, Louisiana.

MAJOR OIL COMPANY WANTS GEOPHYSICAL PARTY FIELD AGENT—GOOD POSITION FOR RIGHT MAN

Experience in South Louisiana marsh and water areas important. Some technical knowledge and experience with boats desirable. Apply by letter giving experience and references. Interview to be arranged. Address: Box 17, c/o The Oil Weekly, Houston, Texas.

WANTED TO BUY

■ Want to Buy—Late model 1500 foot Failing Rotary drilling machine or similar machine for small hole drilling. C. A. Simpson, Bisbee, North Dakota.

■ Want four Nixon Gas Lifts in usable condition. Give complete details and price. Box 49, c/o The Oil Weekly, Houston, Texas.

LEASES, DRILLING ACREAGE, ETC.

■ Driller, Would you complete a well first year for sizeable lease 15/16 free, geology uncertain? John H. Smith 406 First Natl. Bank Bldg., Longview, Tex.

■ GOVERNMENT MINERAL reservation lands can be filed for U. S. oil lease. Its opportunity in developing oil area. Write, S. W. Pressey, Pueblo, Colo.

SQUEAKS from the BULL WHEEL

Why, of Course

An Englishman was making his first trip to an American night club.

"I say, what on earth are those people doing out there?"

"Why, they're dancing."

"Oh . . . They get married later, of course."

A Bargain

"We can't have any fun this evening. I'm practically broke."

"Well, what do you think it takes to send my kid brother to a movie? A $5 bill?"

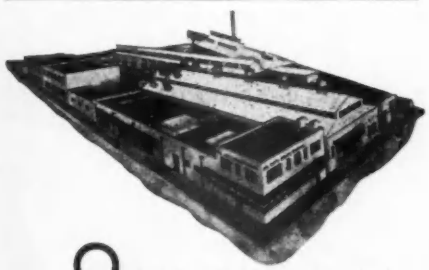
Manpower Shortage

Little Miss Muffett
Sat on a tuffet
Eating her curds and whey.
Along came a spider
And sat down beside her—
And they were married today.

FOR SALE OR LEASE

Core Drills
Shot Hole Drills

ROUSE Manufacturing Company
3511 Milam Phone J 2-4377
HOUSTON, TEXAS



OUR NEW PLANT pictured above is devoted to the proposition that now, more than ever, manufacturers need a dependable sure source of smooth uninterrupted power.

To win America's "Battle of Production" more and more defense manufacturers are replacing less efficient types of bearing metals with BRONZOID. Its outstanding performance record gives positive insurance against costly breakdowns, expensive repairs.

Specify BRONZOID as your standard bearing bronze

OIL CITY BRASS WORKS

Founders • MANUFACTURERS • *Machinists*
Beaumont, Texas, U. S. A.

This Curious World

Many a man who is branded a wife deserter is merely a refugee.

A modest girl never pursues a man; nor does a mousetrap pursue a mouse.

In going through life, keep your eyes open and your mouth shut—and in eating grapefruit, reverse the process.

What with high taxes and such, many a widow is having so much trouble over her property that she almost wishes her husband hadn't died.

Come On, Toots

The old lady was horrified to see a bunch of boys swimming in the raw.

"Boys, that's against the law."

"Yessum, but Jimmy's dad is a policeman, so you can come on it."

Poet's Nook

He married Helen;
Hell ensued.
He left Helen;
Helen sued.

Encore

When Noah sailed the waters blue
He had his troubles, same as you.
For 40 days he drove the Ark,
Before he found a place to park.

Not Guilty

"I suppose you've been in the Navy so long that you're accustomed to sea legs."

"Why lady, how could you? I wasn't even looking."

Lend Me Your Glue

"See here, young feller, what are you doing up my apple tree?"

"One of your apples fell down, sir, and I'm trying to put it back."

Definitions

Father: The kin you love to touch.
Horse sense: Stable talk.

Pig Is the Goat

Tomorrow's our silver anniversary, Joe. Let's kill a pig."

"Why murder a poor animal for something we did 25 years ago?"

Stringing Her Around

She: "Did you know that the length of a man's arm is equal to the circumference of a girl's waist?"

He: "I don't believe it. Let's get a piece of string and see if it is."

Welcome

"Do you serve crabs here?"

"We serve anybody, chum Have a seat."

Thrice-Told Tale

An inmate was being examined for dismissal from the insane asylum.

"If we let you go," asked the superintendent, "what will you do?"

"Well, first I'm going to get a job."

"Fine. I believe you're sane. Then what?"

"Then I'm going to buy me a car and get me a date with a beautiful girl."

"Sounds normal. What next?"

"Then I'm going to take her out driving on a lonely road, put my arm around her, grab her garter, make a sling shot, and come back here and break every window in this blankety blank asylum."

"Best Bet Yet"

CLEAN LINES

A clean wire line helps your crew. They can work safer and better on a clean floor, free from drippings. With a Patterson-Ballagh Wire Line Wiper the line is stripped completely of mud and oil. A compact steel housing contains a spiral rubber which is inexpensive and easily replaced. The rubber wipes the line as it comes out of the hole. Sparkproof. Use one on every well. Now made of PBX, Patterson-Ballagh's new synthetic rubber.

See Composite Catalog

Patterson-Ballagh WIRE LINE WIPERS

Los Angeles 1 Houston 10 New York 6

Standco
NO-SMOKE
STANDCO BRAKE LINING
for the easiest brake known. It "feeds off" evenly. Standco never scores brake rims. See page 2808 Composite Catalog.
Standco Brake Lining Co.
HOUSTON

William M. Barret, Inc.
Consulting Geophysicists
Specializing in Magnetic Surveys
Contracts accepted for domestic and foreign projects, using the most improved instrumental and interpretative technique
GIDDENS-LANE BUILDING
SHREVEPORT, LOUISIANA

HOUSTON LABORATORIES
Analytical and Consulting Chemist
Podbielniak Gas Analysis
Oil Field Brines, Waters and Cores
Complete Evaluation of Crude Oils
Long Distance 267, Box 132, Houston, Tex.

THE FORT WORTH LABORATORIES
Analysis of oil field brines, cores, gas, oil and minerals. Field gas testing. R. H. Fash, Vice President; Long Distance 138
823½ Monroe Street Fort Worth, Texas

WELL LOCATIONS
Elevations • Boundaries
GATOURA & STRAMLER
CIVIL ENGINEERS
1008 Electric Bldg., Houston 2, Texas
C-6953 • Night V-29824

MAILING LISTS
Producers, Refiners, Natural Gasoline Mfrs., Pipe Lines, Drilling Contractors, Supply Companies, Machine Shops, Manufacturers' Agents. Send for catalogue.
OIL INDUSTRY MAILING LIST CO.
909 Tulsa Loan Bldg. Tulsa, Okla.

BAIRD
SINGLE SEAL SEAT
SEATS and BALLS
DOUBLE SEAL SEAT
• Available in a grade to meet the individual well pumping problem.
• Furnish longer continuous runs.
• Fewer pulls for replacement.
• Insure more fluid lift economy.
Sold thru Supply Stores
BAIRD MANUFACTURING COMPANY
OIL WELL PRODUCTION EQUIPMENT
TULSA

MEN IN THE INDUSTRY NEWS

Henry N. Greis, president of Deep Rock Oil Corporation, Tulsa, and other officers and members of board of directors have been reelected. **Dr. G. S. Dille** was named vice president in charge of land and exploration and **A. L. Dade** was made vice president in charge of crude oil supply.

Henry N. Greis

Officers reelected also include **Richard K. Huey**, vice president in charge of production; **W. E. Moody**, vice president in charge of refining; **B. L. Majewski**, vice president in charge of marketing; **E. W. Pollock**, vice president and assistant treasurer; **O. O. Kerr**, secretary and treasurer; **H. R. Shanks**, assistant treasurer, and **R. E. Copman**, assistant secretary.

Dan Moran, president of the Continental Oil Company, has completed an inspection tour of the company's properties on the West Coast.

George O. Ingram, assistant comptroller of the Standard Oil Company of New Jersey, and **Phillips C. Salman**, assistant comptroller of Socony-Vacuum Oil Company, Incorporated, both of New York City, have been elected to the Controllers Institute of America.

Russell Pyles, chief engineer of Van der Horst Corporation of America, will be the principal speaker at the May meeting of the Mid-Continent Section, Society of Automotive Engineers, in Oklahoma City, May 4. His talk will be on the use of porous chrome for engine cylinders, and the increased life and lower maintenance costs due to the properties of chrome.

Paul A. Condit, process application engineer for Cooper-Bessemer Corporation, has been transferred from Dallas to Houston, where he will specialize in process industry applications in such industries as refining and chemical plants. He was in the Dallas district for two years engaged in compressor research activities. His Houston headquarters are in the M. & M. Building.

William L. Brown, landman for Gulf Oil Corporation in West Texas since 1925, has been transferred from Midland to the Fort Worth district office as an assistant to **W. M. Lourcey**, head of the land and scouting departments.

J. A. Mull, Jr., geologist and manager for The Superior Oil Company of California at Oklahoma City, has been transferred to Bermuda, where the company has a contract to de exploatory work.

Marion E. Brock of Houston, assistant to the president of Gulf Oil Corporation, has been elected president of the Texas Safety Association. **Charles A. Miller**, The Texas Company, **Noah Dietrich**, Hughes Tool Company, and **R. B. Roaper**, Humble Oil & Refining Company, all of Houston, were reelected vice presidents.

Jim Fox, formerly of the California Company, stationed in New Orleans, Louisiana, has been added to the staff of Standard Oil Company of Texas, as head of exploration, with headquarters at Houston.

Lucius M. Lamar has been named assistant secretary and **Tom C. Nugent** has been made superintendent of land and leases for The California Company, in New Orleans, Louisiana.

Leland Breckenridge, accountant and tax consultant, has been added to the staff of the American Association of Oilwell Drilling Contractors with headquarters in Dallas. He was formerly connected with the Paul Rutledge and the late C. W. Boller interests, and is a well known specialist in his field.

M. T. Harwell, West Texas district geologist for Texas Gulf Producing Company, has resigned to operate as a consultant with headquarters in Midland, Texas.

E. Lee Thackrey has been added to the West Texas geological staff of the American Trading & Production Corporation with district office at Midland.

John L. Young has been elected vice president in charge of engineering for United States Steel Company's National Tube Company. He has been vice president in charge of industrial research and development of the United Engineering and Foundry Company, in Pittsburgh.

John L. Young

Young began his career with Timken Roller Bearing Company in Canton, Ohio, and in 1930 went to Pittsburgh as a development engineer to study the application of bearings in steel mill machinery. Later he returned to Canton and became assistant general manager of Timken's industrial division. He joined the United Engineering and Foundry Company in 1936 and in 1941 was loaned as project manager to design and construct the Defense Plant Corporation's aluminum rolling mills at Trentwood, Washington.

C. J. Haas has become associated with the Roy Guffey Drilling Company, Dallas. For the past three years he was general superintendent of production of Sohio Petroleum Company for the Shreveport division. Prior to that he was general superintendent for Adams Oil and Gas Company in Illinois.

C. M. Harris, division geologist for Shell Oil Company at Oklahoma City, has resigned to form a partnership with **R. W. Edmund.** The firm will be known as Harris & Edmund, consulting geologists, with offices in the Apco Tower, Oklahoma City.

J. Earle Brown, consulting geologist and producer of Fort Worth, has been elected a director and vice president of the South Shore Oil & Development Company of Chicago.

Deaths

Frank Orr, tax attorney for Sinclair Prairie Oil Company, died April 25, in Tulsa. He joined the legal staff of the Sinclair Oil and Gas Company April 1, 1917.

Jerry Chesnutt, 55, division superintendent for the American Republics Corporation with headquarters at San Angelo, Texas, where he had resided since 1927, died April 19 of a heart attack while apparently recovering from an attack of pneumonia. A native of Corsicana, Chesnutt began working in the oil business in 1907 for the Producers Oil Company, which became The Texas Company. He joined the American Republics Corporation shortly after its organization in 1916, and attained wide acquaintance in Texas oil circles while serving as scout and landman.

Robert L. Culver, machine shop foreman at Shell Oil Company's refinery at Deer Park, was killed in a train accident near Bryan, Texas, April 22.

Joseph H. Jackson, pioneer Houston oil man, died April 25. Jackson, 78, went to Houston 38 years ago as a field foreman for the Producers' Oil Company.

Gabe Brady Moore 45, of Lamesa, Texas, employe of Richmond Drilling Company, was fatally injured in an auto mishap April 18 near San Angelo.

Harold Beach Goodrich, internationally known geologist, died in Tulsa April 25 following an asthmatic attack. Considered the dean of petroleum geologists in the southwest, he was an honorary life member of the American Association of Petroleum Geologists and a member of the Tulsa Geological Society since 1918.

Goodrich, 75, served with the United States Geological Survey and did considerable exploration work in Alaska, Canada, South America and Mexico and is credited with making the first geological map of the latter country. Goodrich was graduated from Harvard in 1892 and went to Tulsa in 1915. He was active in Oklahoma oil development.

Charles Wells Shartle of Houston, vice president and sales manager of the Texas Electric Steel Casting Company, Inc., died April 25 following a heart attack. Shartle, 53, was a native of Middletown, Ohio, and had lived in Houston since 1933.

Williford H. Hawkins, Houston oil operator, died recently at Rochester, Minnesota. He was 62.

J. G. Sindorf, 51, co-owner of Henderson-Sindorf Drilling Company with headquarters at Monahans, Texas, died April 22 in an Odessa hospital.

L. L. Taylor, district landman in Kansas for The Carter Oil Company and a former resident of Tulsa, died in a Halstead, Kansas, hospital April 18. He was 55 and had been associated with Carter for about 30 years.

Two 150 continuous H. P. Murphy Diesel Model ME-66, 6x6½, 6-cylinder, full Diesel engines power the latest model MU-10 Unit Rotary Drilling Rig, purchased by H. Waggoner Drilling Co.

THE best endorsement an engine can earn is the "repeat purchase" after previous installations have proved their value. Two more MURPHY DIESELS have been bought by the H. Waggoner Drilling Company of Oklahoma City, Okla. Waggoner, now operating FOUR MURPHY DIESELS, knows from experience that they deliver dependable power economically for drill-rigs. The continuance of the Waggoner organization as satisfied users of Murphy Diesels is a genuine tribute to the sound engineering, ruggedness, trouble-free performance, relatively light weight, and compactness of these heavy-duty Diesels that assure more power, more profit for users. Write for bulletin.

MURPHY DIESEL COMPANY
5313 West Burnham Street
Milwaukee 14, Wisconsin
TULSA BRANCH:
416 South Detroit Avenue, Tulsa 3, Okla.

205A

1—Haze Evaluator

The Ess Instrument Company, Fort Lee, New Jersey, has perfected an instrument for simplification of the evaluation of the exhaust haze in diesel engines, known as the Hazegage.

Diesel engine exhaust has long been recognized as a primary index of combustion efficiency. Heretofore proper evaluation of haze involved considerable equipment and a time lag which prevented the instantaneous and constant monitoring of fuel-air ratio in order to maintain the quality of haze indicative of optimum engine efficiency. It is also said that another factor of major import is that a smoky exhaust indicates danger from sludge forming in the lubricating oils.

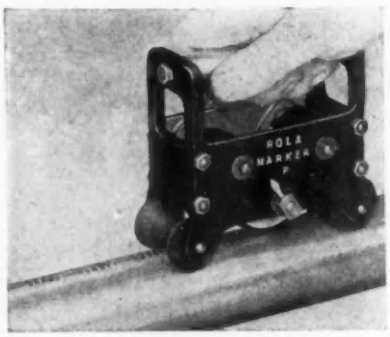
The manufacturer of the Hazegage states that diesels equipped with the device can be operated at optimum efficiency and without the danger of sludge formation in the lubricating oil.

A Hazegage consists of three parts: a light unit, a photoelectric unit and an indicator which has a scale (zero to 100 left and right) and two colored lamps (red and green). In operation the light unit, equipped with a standard electric bulb, shoots a path of light through the exhaust haze; the photoelectric unit measures the density of the haze in the path of light and shows it on the scale of the indicator. Whenever combustion varies so that the haze is either too thick or too thin, the lamps will light; green for too thin a haze and red for too thick a haze. The pointer on the scale, being set to zero to show optimum haze, will move to the left for too thin or to the right for too thick a haze. As the fuel-air ratio is corrected the lamps will go out and the pointer will go back to zero on the scale—indicating optimum engine efficiency.

2—Marking Tool

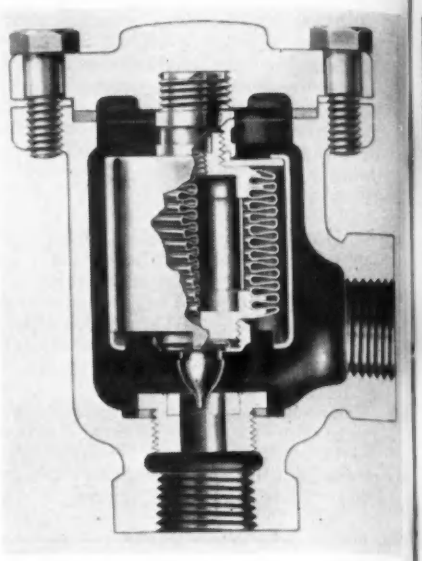
Adolph Gottscho, Inc., 190 Duane Street, New York 13, New York, has developed a marking tool for round tubes, bars, pipes, rods, etc., called Rolamarker P.

This marker can be used to mark the nature of the material, hardness,



alloy, diameter and the complete length.

The die cylinder is preceded and followed by "V" rollers for guiding the impression to the top of the round metal piece. For changes in diameter there is a simple adjustment made by means of opening a wing nut, setting an indicator and then tightening the wing nut. One model covers the range of diameter variations from ⅜ to 2 inches; another from ¾ to 3 inches.



3—Steam Trap

Sarco Company, 475 Fifth Avenue, New York 17, has announced manufacture of bellows from heavy-wall bronze tubing, which has made possible the introduction of a new line of thermostatic steam traps, for pressures up to 225 pounds per square inch, using single, large diameter bellows, for inlet sizes ½-inch to 2 inches, inclusive, and with capacities double those of the company's No. 9 series. The new traps are available in two pressure ranges: No. 9-100 for pressures 0 to 100 pounds, and No. 9-225 for pressures 0 to 225 pounds.

Tubing for the bellows which makes this new trap capable of withstanding the higher pressures, is drawn and helically corrugated in the company's own plant by methods of its own development. The heavy-wall bellows is screwed into the end enclosures and the joints are sealed by brazing, using the latest electronic-induction-heating equipment.

4—Transmission Belt

Goodyear Tire & Rubber Company, Akron, Ohio, announces a new transmission belt which utilizes steel cables for the carcass. The steel cables are encased in an envelope of non-load carrying fabric. The cables consist of a special twisted, finely-stranded high-tensile wire.

Half the cables in a belt are twisted to the left and the other half to the right to insure a neutralized, true-running belt.

5—Fire-Proof Paint

The Wilbur & Williams Company, Park Square Building, Boston 16, Massachusetts, has developed a paint expressly to meet the problem of painting over hot surfaces. The paint gives a brilliant, metallic, flame-proof coating to surfaces subjected to very high temperatures, as well as surfaces hot or cold, where a non-inflammable coating is needed as a fire retardent. The paint can be applied to metal glowing hot without flame hazard.

Use This Coupon for Additional Information

FOR YOUR CONVENIENCE: Check or circle the numbers identifying the information you want; mail this coupon to The Oil Weekly and your request will be promptly sent to the manufacturer. To avoid delay be sure to indicate your complete mailing address.

THE OIL WEEKLY
P. O. Box 2608, Houston 1, Texas, U.S.A.

Please have the manufacturers send me, without obligation, more information or literature on items checked below. (Numbers correspond to descriptive paragraphs as shown in April 30 issue of The Oil Weekly):

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

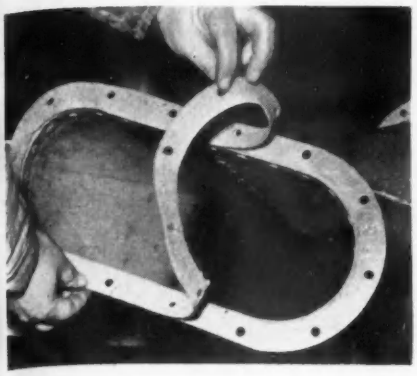
Company_____

Name_____ **Title**_____

Address or P. O. Box_____

City_____ **State**_____

(Print or type clearly name, company and address)



6—Gasket

The Sherwin-Williams Company, Midland Building, Cleveland, has developed a gasket recommended for joint seals in water, fuel oil and diesel oil systems, and many other applications where gaskets are needed.

The gasket consists of a felt base, impregnated with a chromate pigmented compound which renders the material flame and fire resistant as well as corrosion-resistant, it is said. Also the gasket can withstand relatively prolonged exposure to salt water without decomposition. It may be had in factory pre-cut sizes or it can be cut from sheet at the point of use without special tools.

7—Air Control

The Electro-Mechanical Division of Manning, Maxwell & Moore, Bridgeport 2, Connecticut, has developed the Ashcroft Air Control for use on water storage tanks of shallow well pneumatic water systems.

It is an entirely automatic float controlled valve. The valve opens with rising water level permitting air to flow through the connecting line to the snifter valve on the pump suction. Thus when the control valve is open, the pump delivers air and water to the tank to maintain the air volume.

No air is delivered to the tank until the water lifts the float to open the valve. Air or water logging of the system is automatically prevented.

Literature

8—Thermometers

Bailey Meter Company, Cleveland 10, Ohio, has published Bulletin 230-A featuring Bailey Pyrotron Electronic Resistance Thermometers in indicating, recording and controlling models, for temperature ranges between the limits of minus 100° F. and plus 1200° F.

The 12-page bulletin lists outstanding features; describes the electronic detector and motor control; gives definite information on ranges, power supply required, speed of response, accuracy, sensitivity, installation, standard chart ranges, automatic control application, alarm contacts, temperature sensitive elements and measuring circuits.

9—Coatings

Carbozite Corporation, First National Bank Building, Pittsburgh 22, Pennsylvania, has published a manual of directions and recommendations on application of industrial coatings.

10—Ejectors

Ingersoll-Rand Company, Phillipsburg, New Jersey, has published a new catalog covering steam-jet ejectors. Operating characteristics, principles, and features are given, as well as constructive details and schematic diagrams of various single and multi-stage set-ups, with and without intercondensers, precoolers and after condensers.

11—Tank Heater

The Brown Fintube Company, 160 Filbert Street, Elyria, Ohio, has published bulletin No. 451 describing a new tank heater that speeds the unloading of materials, viscosity of which can be lowered by heating. The heater is made in two sizes, one for tank cars and one for tank trucks.

12—Recharger

The B. F. Goodrich Company, Akron, Ohio, has issued a catalog on its recently introduced charger for wet rechargeable flashlight batteries, which can be operated from the ignition system of automotive vehicles. The catalog describes the equipment, tells its functions and pictures methods by which it may be attached to the vehicle.

13—Service

Western Gear Works, 417 Ninth South, Seattle 4, Washington, has published a booklet, "Here Is Why," which explains to the company's customers why deliveries are slower than in pre-war days. Purpose of the publication is to try to create a better understanding of the problems faced by the company and to show why pre-war service is not possible.

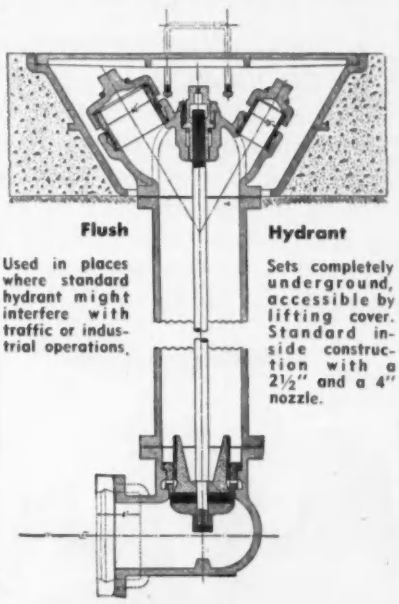
14—Diesel Engines

Fairbanks, Morse & Company, 600 South Michigan Avenue, Chicago 5, Illinois, has issued Bulletin 3800D, on Fairbanks-Morse Opposed Piston Diesel engines. This engine which has been used extensively in marine service during the war is now available for general commercial service.

15—Centrifugal Pumps

Allis-Chalmers Manufacturing Company, Milwaukee 1, Wisconsin, has published a new bulletin describing its Type SS-B, Pedestal Type centrifugal pumps. These pumps have a wide field of application and can be driven by electric motors, steam turbines, gasoline or Diesel engines, direct connected or through Texrope v-belts or flat belts.

VALVES, HYDRANTS


Flush
Used in places where standard hydrant might interfere with traffic or industrial operations.
Hydrant
Sets completely underground, accessible by lifting cover. Standard inside construction with a 2½" and a 4" nozzle.

Write for Catalog No. 34

CHECK VALVE

GATE VALVE

M & H valves are used in the oil industry for water, gas, steam, oil, chemicals and are furnished in all commercial sizes from 2" to 30", inclusive. They are cast iron body, bronze mounted, furnished double disc parallel seat or solid wedge. They are heavily proportioned and have a high factor of safety.

OTHER M & H PRODUCTS

Fire Hydrants
Gate Valves
Tapping Valves
Special Castings
Tapping Sleeves
Check Valves
Floor Stands
Extension Stems
Mud Valves
Flap Valves
Sludge Shoes

M&H VALVE AND FITTINGS COMPANY
ANNISTON, ALABAMA

ORBIT VALVES

MASTER VALVES
with
UNEQUAL FLANGES

The **ORBIT GEAR OPERATED MASTER VALVE** makes your Christmas Tree more compact by eliminating the use of an adapter flange — also eliminating chances for additional gasket leaks. The Unequal Flanges are cast integral with the body of the Valve.

Orbit Gear Operated Master Valve

This valve can be furnished thru all fabricators of Xmas Trees or thru any of your local supply stores at a price comparable to that of other leading valves. The Orbit Valve requires no lubrication to effect a seal.

See 1944 Composite Catalog Pages 2193 to 2212

SERVICE REPRESENTATIVES

R. G. "Bob" Cole, Houston, Texas
Phone Fairfax 0057
Warehouse 1121 Rothwell, Sect. 15
Houston

Earl F. Warren, Phone 919-W, Alice, Texas

Rex E. Galloup, Phone 6436, Lubbock, Texas

ORBIT VALVE COMPANY
TULSA, OKLAHOMA

Farrel-Birmingham Company Elects Chairman of Board

Farrel-Birmingham Company, Ansonia, Connecticut, announces election of Austin Cheney as chairman of the board of directors succeeding Franklin Farrel, Jr., resigned.

Lester D. Chirgwin, general manager of the company's Buffalo plant, was elected vice president in charge of manufacturing, and Franklin Farrel, 3rd, plant manager, Ansonia-Derby plants, was elected secretary and assistant treasurer. Other officers re-elected were Franklin R. Hoadley, president; Carl Hitchcock, Armin G. Kessler and Austin Kuhns, vice presidents; and Frederick M. Drew, Jr., treasurer and assistant secretary.

Carl F. Schnuck, chief engineer, and William M. Fraser, general manager of The Atwood Machine Company, Stonington, Connecticut, recently acquired by Farrel-Birmingham, were elected directors.

Eric C. Gyllensvard was named export sales manager.

Larkin Packer Firm Enters Its Forty-First Year

Larkin Packer Company, St. Louis, has completed its fortieth year as a manufacturer of specialized oil industry equipment. John J. Larkin founded the organization in 1905 in a small shop in Bartlesville, Indian Territory.

From this beginning his company grew into a major concern. Larkin died in October, 1944, and was succeeded as president by his son, W. H. Larkin. A second son, J. J. Larkin, Jr., is vice president in charge of engineering and plant production. Mrs. L. G. Dancy is secretary and treasurer of the company.

Dallas Offices Opened

American Inspection Company, field inspectors of tubular goods and drilling equipment, has opened offices at 30½ Highland Park Village, Dallas, Texas.

Changes in Personnel Made By General American Firm

Lester Selig

Sam Laud

General American Transportation Corporation, Chicago, announces the following changes in officers:

Lester N. Selig, formerly president, has been advanced to the newly created post of vice-chairman.

Sam Laud, a director and previously executive assistant to the president, was elected president.

W. S. Hefferan, Jr., a director and previously scecertary, was elected vice president; Arthur W. Lissauer, general manager of the Process Equipment Division, a vice president; Maurice J. Feldman, secretary; Frank E. Selz, assistant to the president.

Selig joined General American in 1915 at the corporation's plant at Warren, Ohio, before being transferred to the main manufacturing plant at East Chicago. He rose to the position of assistant to the president in 1919 and was elected president in 1931.

Laud was first employed by General American in 1916 and progressed through various positions, including those of plant auditor, plant manager, comptroller and executive assistant to the president. He has held the latter position since 1931 and until his present promotion.

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